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# The Nicotine Fallacy

• P. Charles Green, M.D., Philadelphia, Pa.

IN recent years scientific cigarette research has occupied the attention of more and more physicians and scientists. As yet we are in the initial stage in our results; however, one big fact has been discovered that has had an enormous effect on cigarette sales. It has been revealed that it is in the second half of a cigarette where the most active and deleterious effects are produced. Dr. Emil Bogen of Olive View, California, brought this fact to the attention of the profession in a paper read before the section on Pharmacology and Therapeutics of the American Medical Association at Portland, Oregon, July 12, 1929. Many investigators have concurred in this finding. As a result, physicians everywhere are now recommending that only the first half of a cigarette be smoked.

Cigarette sales have been greater the last year than ever before; but here is an unusual situation, despite this increase the magazine *Fortune* in a survey published in July, 1935, in answer to the question, "Do you smoke cigarettes?" received the following replies.

| *Men* (under 40) | *Men* (over 40) |
|---|---|
| Yes—65.5 | Yes—39.7 |
| No—34.5 | No—60.3 |
| *Women* (under 40) | *Women* (over 40) |
| Yes—26.2 | Yes— 9.3 |
| No—73.8 | No—90.7 |

The interest of the physician in these statistics should be apparent. Cigarette consumption is just as vital a consideration to the physician, the biochemist and the physicist as food, drink and air. In fact, it should be more so because we know so little about the subject. When smoke is inhaled into the lungs it has taken the most direct approach to the blood stream that is possible in a human economy. This being so, the paramount question is, what does the tobacco smoke contain and what effect will it have on the human system? The answer from all sides has been that the most important, the most dangerous, and most lethal poison in the smoke is nicotine. This belief has been held by scientists and laity alike ever since smoking became a habit.

Always nicotine and only nicotine is held responsible for every untoward effect of tobacco smoking. If there is a rise in blood sugar after smoking a cigarette it is nicotine. If there is a cyanosis of the peripheral circulation it is nicotine; if there is a fall in the peripheral temperature it is nicotine. These are largely laboratory questions but the hundred odd symptoms that are supposed to be caused by smoking are all attributed to nicotine. This is well illustrated by the blame attached to nicotine for tobacco staining, tobacco odor and tobacco breath. The truth is that when nicotine is present in the smoke it causes none of these things. The one thing that we research workers in tobacco have apparently not been aware of is that in the smoke of some cigarettes there is absolutely no nicotine at all. In others it is present in a diversity of chemical forms that have not the slightest relation to the poison nicotine sulphate, which is the test tube nicotine that investigators use in their test tube experiments and draw conclusion from.

Of the hundreds of investigations that have been reported in cigarette research not a single one of them has ever been scientifically correct because each and every one started out by committing a fundamental error. I made this statement in a lay publication (*Time*: Letters, June 24, 1935) and hoped that someone would ask me to prove it. No one did.

This fundamental error is the failure to take into consideration the widely varying chemical formulas of different cigarettes. Chemicals are used in cigarettes for very specific purposes and are placed there apart from the manufacturing and natural chemicals present in all tobacco. The first chemical used in all package cigarettes is potassium nitrate for ignition. This chemical is not used in the "roll your own" or pipe tobacco for the free access of the oxygen of the air would cause miniature explosions to take place, as well as scattered sparks. The second set of chemicals is used for adhesion and sweetening. They are gum arabic, licorice, starch, and glucose products. The next set of chemicals are essential oils used for flavoring. Finally, glycerine is almost universally used as a hygroscopic agent. Within the last year one of the prominent cigarette manufacturers has advertised to the profession that he is using a substitute for glycerine, di-ethylene glycol. This chemical is also the technical name for Prestone, which is used as an anti-freeze in automobile radiators. It is a dihydric alcohol and when used in a cigarette develops an excess of a gas that is quite the opposite from what any manufacturer would want.

When you make a formula from any or all of the chemicals, place the combination in a confined space, add a heavy moisture content of ten to twenty per cent of water, and then ignite it, what do you get in the resultant combustion? You get, as anyone can surmise, a widely varying array of chemical reactions, *no two of which are alike*. Therein is contained the first error in cigarette research, for every last cigarette will give you a different chemical combination and a different chemical result. Weighed in the scales of scientific accuracy, there has never been an analysis of cigarette or cigar smoke that could be standardized.

One of the results of all this chemical action on the tobacco vehicle is the destruction and change of the nicotine content in the cigarettes. Just how easy this may be can be readily understood by taking the report of the Connecticut Experimental Station as reported in the *Journal of the American Medical Association*, July 29, 1933:

THE NICOTINE CONTENT OF TOBACCO

| | |
|---|---|
| Pall Mall | 1.04 |
| Philip Morris | 1.44 |
| Lucky Strike | 1.88 |
| Old Gold | 2.17 |
| Camel | 2.31 |
| Chesterfield | 2.53 |
| Fatima | 2.79 |
| Piedmont | 3.11 |

It will be noted that this is the nicotine content of the tobacco *and not of the tobacco smoke*. Heat will not only change nicotine, it will also completely destroy it, so you start off by figuring that only 10 per cent of nicotine can reach the smoker and that *never* as the nicotine sulphate of the laboratory, but one of the twenty-five different varieties of nicotine which chemists have succeeded in isolating.

Cigarette tobacco and cigar tobacco differ widely in their chemical composition. W. W. Garner and his two associates report in *Industrial and Engineering Chemistry*, September, 1934, that cigarette tobacco contains a much higher percentage of starch and sugar than cigar tobacco. The catalytic action that results in the destruction of glucose is very intense. In addition, cigars have a much larger surface exposed to the air, and the resultant oxidation gives to their smoke an entirely different chemical reaction and one that can come closer to being standardized. All of this may be interesting but how am I going to prove that the nicotine in cigarette smoke is not the active poison, or in fact is not present at all? The answer is by taking from tobacco smoke the one concrete element that is always present and will always reveal, through an accurate chemical analysis, just what was present in the smoke. This element is—*tar*.

Cigarette tar has become increasingly important by reason of the studies that have been made of it as a possible cancer agent. Dr. W. D. McNally, of Chicago, in a report published in the *American Journal of Cancer*, November, 1932, gives an analysis of the tar taken from 33 different cigarettes, and in no two cigarettes was the percentage or the composition of the tar found to be the same. This completely proves my statement regarding the differences in cigarette analysis. However, I am prepared to offer direct proof of the nicotine fallacy by showing how it is possible for any physician to take the tar out of any cigarette smoke he may desire. He can then send it to an analytical chemist for a detailed report of its composition. If the chemist does not find evidence of nicotine in the tar then there was no nicotine present in the smoke. It is also important to identify the particular nicotine that is found, for in no single instance will it ever be nicotine sulphate.

While in this instance we are only endeavoring to prove that nicotine is not the head devil it is always supposed to be, it will be well to remember the other poisons that may be present in cigarette smoke: carbon monoxide, wood alcohol, pyridine, nitrous fumes, and narcotine.

Why is anyone able to smoke cigarettes if any or all of these poisons are taken into the system? The answer is that one could not if it were not for the air that is breathed into the lungs at the same time. With every puff of a cigarette a deeper inspiration is taken and, in the case of one who inhales, the depth of inspiration is triple or more the ordinary breathing rate. Every physician remembers Sir Humphry Davy's classic experiment on himself. In testing out the effects of nitrous oxide with his nostrils completely plugged, he was rendered unconscious after the second deep inspiration and almost died from the effects.

The next question is, how much of the tar and of other deleterious ingredients is retained in the system when the smoke is exhaled? Dr. Morris Fishbein in the *Scientific American*, March, 1928, reported the results of two German cigarette research workers, Dr. C. Neuberg and Dr. Maria Kobel of the Kaiser Wilhelm Institute of Bio-Chemistry, Berlin. These workers reported on the wood alcohol in cigarette smoke, and stated that not more than one-tenth inhaled was again exhaled. Smoking of twenty cigarettes containing twenty grams of tobacco a day, a smoker would inhale 40 mg. of wood alcohol, and this would not be particularly dangerous unless the smoker were afflicted with heart or lung disease.

Dr. Emil Bogen in the same number of the *American Journal of Cancer* as Dr. McNally's study, November, 1932, stated that he found the tar residue in cigarettes to be 4.84% to 15.29% and that retained in the body 6.56% to 11.58%.

Early in my cigarette research study some five years ago I discovered how easy it was for a non-smoker not only to smoke but to do it in a graphic way that enabled the investigator to keep the resultant smoke in sight and control all the time. I began with the simplest of tests as to acidity, odor, stain, et cetera, when I was startled by the discovery how tobacco smoke could be reduced to its last component. After that it was only a question of the assistance of a competent analytical chemist to solve any tobacco problem that existed. This has been greatly added to recently by x-ray studies, as the smoke reveals surprising evidence of unsuspected elements.

Not to digress from my subject of the nicotine fallacy, here is the method I use to determine and study the exact amount of tar, nicotine, carbon monoxide, and all other ingredients in any cigarette smoke.

A glass connecting tube such as we use for sight determination between sections of rubber tubing is employed. The cigarette to be tested is inserted in one end, care being taken to exclude air as far as possible. To effect this purpose I find Scotch cellophane adhesive tape best suited. The suction is applied by different sizes and types of small rubber syringes at the opposite end, depending on whether you wish to collect the tar on a membrane or deposit it in the tube.

If it is desired to collect the tar in the tube a small, soft rubber, one-piece ear syringe is used. Pressing the narrow tip directly into the tube, it is held firmly against the end and suction applied as the cigarette is lit. You are now in position to smoke the cigarette in twenty seconds, or to take five minutes or more for your experiment. Within the tube you can place any chemical, ma-

terial, or test solution, either directly or on cellulose, paper, or cotton.

If you wish to collect the tar on a membrane, just stretch your material taut over the suction end and hold in place by a rubber band. A soft

Tar from one cigarette.

bulb syringe with a mouth wide enough to encompass the membrane is employed, and pressure applied in the usual manner. You can now study the tar under the microscope, or, by making a solution, with the spectroscope. For x-ray study a backing of tin foil or lead is employed. While the method of extracting the smoke is of the simplest, yet it can be varied as desired to involve the most elaborate chemical or biochemical examination and investigation. It can also be made to simulate direct human smoking.

The first physician to call attention to the importance of other factors than nicotine in tobacco smoke was Dr. W. E. Dixon of Cambridge, England, whose special lecture, "The Tobacco Habit," was printed in full in the *British Medical Journal*, October 22, 1927. Therein he stated that if the tar containing pyridine, ammonia gas, odor, nicotine, and other objectionable elements could be eliminated from the smoke, very much of benefit to the smoker would result. Cigarette manufacturers are not interested in this question, their whole attitude being "Why bring that up?" The public does not know about it, so let sleeping dogs lie. The dogs, however, are beginning to awake, and the ones who are prodding them are toothpaste manufacturers and other commercial agencies.

The study of cigarette smoke and its effects on the consumer is primarily a job for physicians and biochemists, but like all other jobs, if the fundamentals are neglected, the results are not accurate. If tobacco manufacturers were wise men instead of myopic business men they would welcome any research that would improve their product and at the same time protect the health of the consumer.

Much rationalization of this problem is being worked out in England where the British Tobacco Control Board rigidly censors the kind and character of chemicals that can be added to tobacco. A sensitized smoker can tell the difference between Canadian, English and American cigarettes. The assumption that stain means nicotine is well illustrated in the use by English manufacturers of so-called filter tips for cigarettes. They have even invented a machine to make them, as a patent was recently granted at Washington to the English Filter Tip Company, Ltd., of London. They are sold in New York by the American branch of an English firm. The filter tip is simply the old cubeb paper mouthpiece with a cotton insert that dates back over fifty years. This is labeled "non-nicotine mouthpiece."

It is only fair to state that the knowledge regarding the total or almost total absence of nicotine in Oriental tobaccos is not new. Back in 1905, the late Dr. John V. Shoemaker, Professor of Therapeutics and Pharmacology in the Medico-Chirugical College, Philadelphia, wrote in his textbook on Therapeutics as follows:

TABACUM (U. S. P.) TOBACCO

Pharmacology.—The commercial, dried leaves of Nicotiana tabacum. (Solanaceae), indigenous to the southern portions of this country and cultivated in different parts of the world, are known as tobacco. It was carried to Europe by the Spaniards, and from the court of Lisbon it was taken to France in 1560 by the French ambassador, whose name, Nicot, is preserved in the generic title applied to the plant. Its active principle is a liquid alkaloid, nicotine. The *fumes*, when burning, contain pyridine, hydrocarbons of the aromatic series, small amounts of creosote, hydrocyanic and acetic acids, sulphur and carbon compounds, and certain gases, *but little if any nicotine*, which is decomposed by heat (Zeise). The existence of nicotianin, a camphoraceous substance, has been affirmed by Hermbstadt, but is denied by Fluckiger, who considers it a fatty acid contaminated with a little volatile oil. Slight differences in composition exist in specimens grown in different places, as it is well known that the variation in flavor and quality is very decided. The best tobacco is grown in Cuba and Virginia. *The Turkish variety is almost free from nicotine*, and is very mild. In the East, the tobacco is sometimes tinctured with opium, in order to increase the narcotic effect. There are no official preparations (italics mine).

As many physicians may not have access to an analytical chemist, and might desire to do a little testing for themselves, I will give a few of the simpler tests of cigarette smoke that can be made by using the method I have described.

*Nicotine:* Gross tests for nicotine are unsatisfactory by reason of getting the same reactions from some of the other constituents that may be present in cigarette smoke. A very simple test is one or two drops of a formaldehyde solution followed by a drop of nitric acid on white blotting paper or cellulose ribbon. Nicotine gives a rose-red color. Another test is made by using a perchloride of gold solution in the same way. Run water through the tube before testing and let the moisture remain on the glass. A white precipitate indicates nicotine.

*Glucose:* A dozen different tests can be made. The one I like the best is a two per cent solution of methylene blue in a one per cent carbonate solution. You again use cellulose or paper as a carrier and you can judge of your glucose reaction very quickly.

*Carbon Monoxide:* This test is the easiest of all if you have the necessary reagents. The palladium salts are extremely sensitive to carbon monoxide. This fact has been taken advantage of by The Experimental Laboratories, Inc., of Chicago, which recently devised a testing outfit resembling the one I use. It is used to test illuminating gases for carbon monoxide content. A full description can be found in the trade journal, *Gas Age*, August 18, 1934. Papers treated with the palladium salts are used, and you can judge of the percentage of CO present from the darkening of the paper.

In all the tests it will be found interesting to note the point in the cigarette where you get your first reaction, and to watch this reaction increase in in-

*(Concluded on page 51)*

# Conservative Versus Operative Treatment of Acute Mastoiditis

• PHILIP FRANK, B.Sc., M.D., Otolaryngologist, Israel-Zion Hospital of Brooklyn; formerly Assistant Otolaryngologist, St. Louis City Hospital; Associate Otolaryngologist, Jewish Hospital of St.Louis. Brooklyn, New York

THE seasoned otologist will probably meet a discussion of the conservative versus operative treatment of acute mastoiditis with an elevation of the eyebrow because to him the limitations of the one and the exigencies of the other are thoroughly well defined. But confusion exists in the non-surgical quarters of the profession, as evidenced by a remark made to me by a pediatrician to the effect that during the past twenty years most of the cases of acute mastoiditis coming under *his* observation have cleared up *without* operation. The inference is, of course, that most of the operations performed for this condition are done unnecessarily.

My answer to this pediatrician was that if he should lose sight of the fact that in every instance of acute mastoiditis, irrespective of the mildness of the symptoms, he is dealing with a *surgical* condition, even though by a combination of fortuitous circumstances the case may clear up without operation, he is some day going to meet disaster. There are those, including otologists, who speak of a "surgical mastoid" in contradistinction, by implication at least, to a "medical mastoid." Let me say that any such distinction is pure fiction. Every acute mastoiditis is a surgical mastoid, only differing in degree of severity and liability to complications according to the type and virulence of the infecting organism. Ordinarily a staphylococcus seems to be regarded with greater impunity perhaps than a *Streptococcus viridans* or *hemolyticus* or *mucosus* but it should be borne in mind that a *Staphylococcus aureus* may sometimes assume very virulent properties. A non-surgical attitude of mind with regard to acute mastoiditis is, in my opinion, a menace to the patient.

Conceding that some cases do clear up—and they are by no means in the majority—it is, however, impossible to prognosticate from the outset whether the patient will or will not require operation. The safest course to pursue is to remain on the *qui vive* and assume that the patient will require operation. Should the case perchance clear up without it, let it come as a great surprise.

However, the question arises, how long is one justified in waiting? That is the crux of the problem.

Of course, every effort should be made to establish adequate drainage through ample incision of the drum. But I have noticed that many attending physicians often make the mistake of feeling secure because the discharge is "very copious" and that, therefore, "drainage is good." Nothing is farther from the truth. Such a copious discharge, where the ear fills up almost as fast as it is dried out, is by all means an indication for early operation. I have always advised it and followed it, where possible, and in twenty years of otolaryngological practice I have never had occasion to offer regrets. In the absence of complications, postauricular drainage is *not* a formidable operation and in the presence of a copious discharge, flowing like a water tap, it is the only rational manner of dealing with the situation. Good surgery demands it.

Another false interpretation often made by physicians in reference to the necessity for operation in acute mastoiditis is the minimal presence of pain over the mastoid antrum. Because the pain is not severe in this locality, a phenomenon often encountered in younger children, they consider the infection mild—meaning, of course, that temporization is in order. Far from it. I have seen many cases where the tenderness over the antrum was negligible but the pain over the mastoid tip or over the mastoid emissary vein was very severe. And at operation I have found, aside from granulations in the antrum, not merely a few infected cells but virtually complete necrosis of the tip or softening over the sigmoid sinus wall. The mildness or absence of antral tenderness is not a reliable guide to infective benignity.

The attempt to standardize a "waiting period" before operation is performed—ten days or two weeks (or longer)—for the purpose of "localizing" the infective process, is fallacious to an extreme. This teaching should be discarded. Each case must be evaluated on its own basis. The very important question of toxicity must be taken into consideration. Some children will play in the streets with pus oozing from the ear, a protruding auricle and a full-fledged, postauricular abscess due to cortical dehiscence from a neglected mastoiditis, entirely oblivious of their condition. Other children are overwhelmed by a profound toxemia and require operation in very short order. My own daughter developed an acute suppurative otitis media quite suddenly a week after her recovery from grippe. It was ushered in by a sharp pain. Within an hour the right drum was bulging and ready to rupture. The child was drowsy and lethargic. I incised the drum and from then on a serous, pinkish discharge kept flowing as fast as I could clean it out. For three days this continued without cessation and she lay in a stuporous state. It was evident that the process was devastating. Operation was performed regardless of time element conformity and the whole mastoid was found to be the seat of a most virulent and intense hemorrhagic process. Yet the local symptoms were not exceptionally severe; because of the stuporous state

probably they couldn't be elicited in full measure. But the constitutional reaction was very severe. In cases of this type it is absolutely preposterous to stand by and wait according to some arbitrary yardstick. Wait for what? For the process to "localize" itself or for the virulence to undergo attenuation? The danger is in delay, not in intervention.

I recall a boy, 10 years old, who had an acute bilateral purulent otitis media. One side cleared up quickly. The other did not. There was but little tenderness and edema, the discharge was serous and the boy was toxic. The boy's father requested consultation with another otologist who counselled waiting as against my insistence upon operation. The father asked whether by waiting an operation could be averted. To this the consultant replied that he did not think so, that the boy would eventually have to be operated upon. The father answered that in view of the inescapable eventuality the operation might just as well be done as soon as possible and be over with. At operation I found scattered areas of necrotic cells throughout the mastoid and I had to curet away over a quarter inch of necrotic bone from around the sigmoid sinus wall. Just what was there to gain by waiting according to rote in this case? Only a sinus thrombosis, that's all. . . .

In another case, a boy 15 years of age, where waiting was advised and followed and I could not obtain consent for operation, a sinus thrombosis was evidently in course of formation and it was only when the boy displayed exceedingly violent chills with temperature excursions to over 106 degrees that I was finally permitted to operate. In this case I not only had to open the sinus but I had to ligate the jugular.

Suppose a case does (seemingly) clear up without operation; how can one be sure that it has actually done so permanently? The answer is that one cannot. Most of these cases are lost to observation and the ultimate termination is unknown. But in the meantime they are classified as "cured." Are they?

Take a case like the following: About fifteen years ago I saw a 13 year old girl with an acute suppurative otitis media requiring paracentesis. For ten days or more there were indefinite mastoid symptoms which finally "cleared up." I did not see this girl again for ten years. Then I was called to see her in an emergency. The following was the history: Except for several "slight" attacks of aural discharge she had been well during this ten year interval. She had occasional headache but never severe enough to incapacitate her. Three weeks previous to the present situation she began to complain of radiating pain over the left parietal region and in the face. A physician diagnosed "facial neuralgia" and prescribed accordingly. Improvement was temporary followed by recurrence of the attack. Two days before, on her way home from church on a Sunday morning, she suffered a severe vertigo but had the presence of mind to press the doorbell of a doctor's office. When the door was opened she was found lying unconscious on the floor of the vestibule. From papers in her handbag her identity was ascertained and she was brought to her home a few blocks away, and the family physician called. On regaining consciousness she became delirious and screamed from excruciating pain in the head. Twice she attempted to leap from a second story window. I found a temperature of 102.2 and a pulse of 55. The left drum showed a posterosuperior perforation, but the ear was dry. She was removed to the hospital, where a lumbar puncture showed 2500 cells per c.mm., under pressure, and a large number of diplococci. Knowing the history of the girl, now 23 years old, I had no difficulty in visualizing what had occurred in the production of this otogenous meningitis. That night I opened the mastoid, which proved to be entirely eburnated, laid bare the tegmen antri and discovered an extradural abscess. For ten days the girl got along very well. Her headache was gone, her mentality improved, she was able to recognize and name objects (which she had been unable to do prior to operation), and her spinal fluid count decreased considerably. To all appearances she was very comfortable. But without warning, one night, she died in her sleep less than half an hour after I had visited her and found her in exceedingly good spirits because of a present that she had received from her fiancé. Embolism? Rupture of a cerebral abscess into the third ventricle? I don't know. Autopsy was not permitted.

Without going into the detailed findings I merely mention this case as an example of termination in a non-operated "cured" case.

How many of these patients that are lost sight of by the then attending physician end similarly?

Those who pride themselves on the number of mastoiditis cases that they have "saved" from operation are making a very serious mistake.

There is but one safe rule to go by and that is to approach every case of mastoiditis as a surgical condition and not to temporize unnecessarily with pus or hemolytic organisms in a region which is a hotbed for intracranial complications. There is no "medical" mastoid as opposed to "surgical" mastoid. Every acute mastoiditis is surgical—operation or not.

416 Ocean Avenue.

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### Tetanus Toxoid

D. H. Bergey and D. Etris.

(*Clinical Medicine & Surgery*, 43: No 1. 1936.)

Bergey and Etris found that tetanus toxoid can be refined by precipitation with alum and that the alum precipitated tetanus toxoid has a much higher immunizing value than the plain toxoid of Ramon and Zoeller.

Two doses of 1.0 cc. each of the alum precipitated toxoid given to human beings at an interval of three months, causes the formation of from 0.1 to 9.0 units of tetanus antitoxin one month after receiving the second dose. A year after receiving the second dose the amount of antitoxin remaining in the blood of persons ranges from 0.01 to 2.0 units.

Active immunization of human beings against tetanus is practiced by giving two subcutaneous injections of 1 cc. of the alum precipitated toxoid three months apart. One month after the second dose the person has laid the foundation of an active immunity. If he meets with an injury subsequently a third dose of toxoid is given. The active immunity can be maintained at the protecting level by giving further doses of the toxoid at intervals of one or two years.

# Impotence In the Male

• Philip Goldfader, M.D., Brooklyn, New York

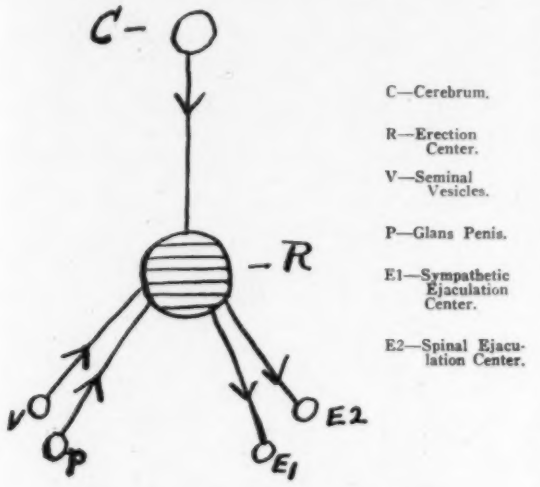
THE ability to exercise the sexual function properly may not be necessary to the life of the male, but it is essential to his happiness. It appears, following a study of several years, that those patients who suffer from a disorder of sex are the most unhappy and dejected of all the patients that a urologist has to treat. The realization of his inability to perform the sexual act brings with it a feeling of intense humiliation and despair. He stands not only degraded and lowered in his own estimation but in that of the world; he is robbed of every hope and ambition. Even when he turns to the medical profession for relief, he finds very few willing to aid him or give him any encouragement. The medical profession is primarily interested where the loss of life is threatened or endangered but gives little consideration to the treatment of minor ailments, amongst which sexual disorders are included. As described by Walker (1), "They occupy a no-man's land between the neighboring claims of the neurologist and genito-urinary surgeon. They are neither fish, nor fowl, nor good red herring". The genito-urinary surgeon is occupied with the diagnosis and surgical treatment of lesions of the urinary tract and does not or will not devote any time to listen to the ramblings of the sexual neurotic. The neurologist, who is more painstaking with these patients and can diagnose their mental condition, is not able to determine the presence or absence of pathology in the sexual organs and, if the local factor is responsible for the impotency, he is not in a position to treat them intelligently. On the other hand, the general practitioner with a busy practice cannot keep abreast of the times and is not equipped to give this patient all that modern science has to offer for his return to normality. He is usually told that there is nothing seriously wrong with him and is given a tonic and advised to take a vacation. In his quest for relief he finds very few willing to listen to him and take his trouble seriously and in time he falls an easy prey to the quack and unscrupulous medical man.

Impotence in the male is that condition in which the man is unable to obtain an erection and maintain it sufficiently for intromission and mature ejaculation and must be differentiated from sterility or the inability to reproduce. Sterility may be present without impotence and an impotent man may be fertile and the father of several children. The projection of the semen into the cervix is favorable to conception but is not absolutely essential as pregnancy has occurred in patients with a history of premature or very rapid ejaculation, where the semen has been deposited at the entrance of the vagina, without even real intromission. But, as a general rule, the impotent man is also sterile, since, except in rare cases, he is unable to deposit his semen into the cervix.

In order to understand the pathology of impotence as well as the influence of various etiological factors in its production, it is necessary to have a clear conception of the mechanism of normal coitus. The normal act of coitus consists in the following sequence of events, and in the harmonious relationship of the various factors. In the first place there must be a libido, or desire for sexual intercourse; then there must be the erection of the penis; then ejaculation; and finally the orgasm. For normal coitus, the sequence of events must occur in the order named and the relative time for each factor must be observed. The centers that control erection and the movements during coitus and ejaculation lie in the lumbar swelling of the cord. The erection and ejaculation centers are separate and distinct and capable of functioning separately. In the description of the sequence of events which takes place during normal coitus in the sexual centers and nerves I have closely followed that given by Groag and translated by Dr. Max Huhner (2). We may represent the various conditions diagrammatically as follows: From C (cerebrum, i.e., libido) impulses are sent to R (erection center), which sends them to the dilator nerves until complete erection results (i.e., dilatation of blood-vessels of penis, etc). Now R receives from P (glans penis during friction continuous new impulses which serve to strengthen and keep up the erection. Besides sending the receiving impulses to the dilator nerves, R has also the function of keeping back a part of the impulses it receives until the cells of the erection center are filled to their utmost tension, and then to send impulses to E 1 (sympathetic ejaculation center), which causes the expulsion of the secretions of the sexual glands), and also to E 2 (spinal ejaculation center, which controls the striated muscle fibers). The impulses that come from P to R (through friction of the glans penis) may be weaker, in proportion as the impulses that come from V (distended seminal vesicles) are stronger. In other words, with markedly distended seminal vesicles we can get normal coitus even if there is less friction of the glans penis, for enough impulses are coming from the seminal vesicles to fill up R. As soon as R is so filled up with impulses from C, P and V that they overflow to E 1 and E 2, ejaculation occurs. The erection center (R) has two functions: first, to receive impulses from the cerebrum (C), the penis (P), and the seminal vesicles (V), and second, to hold back these impulses till the proper time and then send them to the ejaculation centers (E 1 and E 2), so that ejaculation should come just at the proper time and not too soon.

Impotence may be divided into various groups depending upon the pathology present. Different etiological factors may be present and more than one may be responsible for the symptoms in any one case.

I—Impotence may be due to malformations and deformities or abnormalities which prevent the approach of the penis to the vulva. In this group are included cases of ankylosis of the hips in flexion, great obesity and any form of large scrotal tumor




Diagrammatic Scheme of the Nervous Mechanism of Normal Coitus (after Groag).

or hydrocele, hernia or elephantiasis. Intromission becomes impossible when the penis is congenitally absent or has been removed surgically and also when the organ is markedly distorted by trauma, neoplasm or inflammatory damage to its erectile tissue. The prognosis in this class of case depends upon the etiological factor present and our ability to remove the cause by surgical measures. In regard to mechanical appliances little good can be said. Penile splints do no more than encourage a false sense of hope; while vacuum pumps and other so-called developers are for the most part only instruments of quackery.

II—Impotence may be due to certain local genital disorders which predispose to sexual irritability and impotence, such as lesions of the verumontanum and pathological conditions of the prostate and seminal vesicles.

In this group, the main symptom may be a weakness of desire and of erection, or, on the other hand, the chief difficulty may be one of irritability resulting in premature ejaculation. In the later stage, the penis may become only partially firm, but goes down without any ejaculation taking place. In the final stage, although libido may be present, there is neither erection, ejaculation nor orgasm. In describing functional impotence it has been customary to divide it into two types: on the one hand, the paralytic form and, on the other hand, the form due to irritable weakness. In carefully going into the history of these patients, we can often obtain the information that the stage of paralytic impotence was preceded by the stage of irritable weakness. In other words, before the patient became totally impotent he suffered from premature ejaculation; that is, irritation of the sexual centers was followed by exhaustion. For purposes of treatment it is therefore advisable to remember that paralytic and irritable impotency are different stages of the same condition.

Before treatment is instituted it is important to determine whether there is a hyperirritability or exhaustion of the sexual centers, congestion or inflammation of the prostate, and whether there is an involvement of the posterior urethra and colliculus. These facts can be decided only following a complete genito-urinary study which should include an examination of the external genitals, palpation of the prostate and seminal vesicles and a microscopical and bacteriological examination of the expressed secretions, determination of the presence or absence of stricture in the urethra, and a cysto-urethroscopic study of the entire urethra. The urine should be examined for the presence of sugar as diabetes may be an etiological factor. The urethroscopic findings in a large proportion of the cases, varying clinically from premature ejaculation to complete impotence, show well-marked pathologic lesions, especially in the posterior urethra, according to Wolbarst (3). The lesions involving the colliculus are exceedingly varied in character. There may be simple congestions, erosions, granulations, polyps, cysts, excrescences, hypertrophy, swelling and distortion. The urethral floor posterior to the colliculus may be eroded and cut up into deep ridges and ruts (trabeculations), highly inflamed and bleeding easily on contact with the urethroscope.

The first indication in the treatment is absolute sexual rest in order to give the exhausted sexual centers an opportunity to recuperate. Sexual excitement in any form and coitus are absolutely interdicted. If married, the patient should sleep in a separate bed, preferably in another room. If the patient is young and in good physical condition he should abstain from coitus from two to four months, while in men past forty-five this period should be much shorter, as there may be some difficulty in stimulating the sexual impulse after the patient has remained continent for too long a period. The diet should not contain anything which would stimulate the sexual centers at this period, i.e., alcoholics, tea and coffee. Internally, bromides should be prescribed in doses of 15-20 grains three times a day after meals. This medication is given to quiet the irritable sexual centers and at the same time to abolish all sexual desire for the time being. In the younger patient, this dosage may be kept up for 6-8 weeks, while in the older patient a period of 4 weeks is sufficient; then the dose is gradually reduced. The bromides should be given in both the irritable and paralytic forms of impotence.

If the examination reveals a congested or inflamed prostate or diseased posterior urethra, local treatment is indicated. In the presence of congestion or inflammation of these organs, impulses are constantly passing from them to the sexual centers, even in the absence of sexual excitement. The treatment consists in gentle massage of the prostate and seminal vesicles every 5 days. The object of this massage is to relieve the congestion and to help the exhausted muscles of the prostate to regain their normal tonicity. The massage is usually followed by an instillation of silver nitrate into the posterior urethra with a Bang's sound. I usually start with a

1-2000 solution of silver nitrate and gradually increase the strength until the patient can comfortably stand a solution of 1-200 or 1-100. If the urethroscopy reveals polyps or cysts of the posterior urethra, they should be destroyed by fulguration, using a bipolar current. If the treatment has been given for several months and the colliculus still appears enlarged and congested, direct applications should be made to the colliculus through a posterior endoscope, employing a 10% or 20% solution of silver nitrate. These applications can be made almost painless by the previous injection of 20 cc. of a 1:500 solution of nupercaine, retained in the urethra for ten minutes. Treatment addressed to the prostate, seminal vesicles and posterior urethra should only be given when indicated and the patient should not receive prostatic massages over a period of months just because a diagnosis of impotency has been made.

During this time attention should be paid to the general health of the patient, as it is not possible to improve the tone of his sex organs alone; treatment must be directed to the entire complex of his mental and physical equipment. The patient should have sufficient rest, a liberal and easily digested diet including cream and other fats, and a daily evacuation of the bowels, as constipation tends to increase local congestion. Tonics and out-door sports and exercises up to the point of tolerance are indicated as they improve the general body tone. In those patients who can tolerate it, cold baths or cold spinal douches in the morning on arising are useful aids in the treatment. The treatment should be continued until the exhausted sexual centers have recuperated and the condition of the posterior urethra and adnexa is normal. The bromides are then discontinued and sexual stimulants are prescribed.

Many of the aphrodisiacs which have been advocated in the treatment of impotence are not only worthless but if used for an extended period are often harmful. The following gives a summary of the most common drugs that have given me results in selected cases. In cases of impotence associated with great nervous depression phosphorus may be given in the form of a pill (phosphorus 0.001 gram), as acid phosphoricum dil. (5-20 minims), or in the form of glycerophosphates and hypophosphites. If arsenic is used it is given solely for its tonic action and should be combined with other tonic drugs such as iron, quinine and nux vomica. In cases of impotency associated with spermatorrhea and frequency of micturition ergot or ergotin may be used in combination with strychnine or quinine. Another drug which has been employed extensively in the treatment of impotence is strychnine, which should be used chiefly in cases of diminished libido associated with weak, ill-sustained erections. It should be used after the other methods described have been employed and the local congestion in the prostate and urethra has subsided and just before an attempt is made to resume coitus. The method I use is the one advocated by Dr. Huhner. On the night that coitus is likely to take place the patient takes one tablet of strychnine nitrate or strychnine sulphate, gr. 1/20, at intervals of two hours, say at 5, 7, 9 and 11 P.M. If the patient has no sexual desire no attempt should be made to have intercourse even though he has taken the pills. Another attempt should be made in a few days or a week and if possible this should be preceded by the taking of the pills. Strychnine, when taken as described, causes the penis to become sufficiently erect so that it can enter the vagina and remain erect while coitus is taking place.

III—Constitutional causes include chronic intoxication, general debility and endocrinopathy. Impotence occurs in various forms of acute and chronic poisoning, acute febrile conditions, fatigue, general weakness, chronic debilitating conditions and diabetes. Any pronounced endocrine disturbance is likely to produce this condition. Testicular insufficiency does so in eunuchs castrated before puberty. Pituitary and thyroid failures often diminish, if they do not entirely abolish, the sexual power. Impotence is commonly associated with diabetes and here the disease itself seems to be the direct cause of impotence. The relationship between obesity and impotence has a basis in some metabolic depression, endocrine or other, which is responsible for both conditions. The same diminution in sexual vigor is noted in most chronic and debilitating conditions with the notable exception of phthisis. In this disease both desire and potency may be increased. Alcohol and poisons usually affect the sexual desire adversely. Alcohol taken in small quantities usually acts as an aphrodisiac, but taken to excess over long periods of time it causes a lessening of the sexual desire. Cocaine and morphine habitués are usually impotent.

The treatment of these conditions depends upon the etiological factor. In acute febrile conditions, the impotence is usually temporary and slowly disappears as the patient's condition improves. In cases of general weakness, fatigue and debilitating conditions, measures to improve the general health are indicated, such as good and nourishing foods, plenty of rest and sleep, plenty of fresh air, tonics, freedom from worry, change of climate, etc. Obesity, in itself, may produce loss of libido, but unless there is in addition a grave disturbance of the pituitary, sterility is more likely to be affected than potency. Loss of sexual desire may be an early symptom of diabetes and, if it occurs in an elderly patient, treatment with insulin and diet may cause the sugar to disappear from the urine, but, as a rule, there is no perceptible change seen in the patient's sexual desire or erections. If there is evidence of endocrine dysfunction, this should be corrected by specific replacement, otherwise the employment of glandular products is futile.

IV—Impotence of nervous origin follows structural or functional derangements of the nervous system involving either the cerebral cortex, lumbar centers or the peripheral nerves and these are usually due to injuries, tumors and syphilis of the spinal cord, or, less often, of the brain. The sexual weakness seen in melancholia and general paresis is due to damage of the higher centers, whilst in tabes and myelitis it is due to involvement of the lumbar centers. The impotence that sometimes accompanies peripheral neuritis and postdiphtheritic paralysis is due to involvement of the peripheral nerves. In some cases of involvement of the cen-

tral nervous system, the patient may experience a preliminary stage of sexual excitement which is soon followed by a decline. Apoplexy and tabes demonstrate this sequence. The early tabetic usually has a period of increased sexual desire, due to irritation of the lumbar centers in the cord, which is soon followed by a period of decline. The effects of traumatic lesions of the brain and spinal cord depend upon the site of the injury. An injury to the upper part of the cord is more likely to cause priapism, whilst an injury to the head or to the lumbar segment of the cord may be followed by a paralytic impotence which may be temporary or permanent depending upon the severity of the injury. The functional types of impotence, usually referred to as sexual neurasthenia, result from exhaustion of the sexual centers from excess in coitus, withdrawal, or masturbation frequently repeated and continued over a long period of time.

The neurologic treatment includes the care and management of organic disorders of the central nervous system, and of the functional derangements or sexual neurasthenias. A blood Wassermann should be taken in every case included in this group, which should be followed by a spinal Wassermann in the cases giving a positive blood Wassermann and in the neurological cases even in the presence of a negative blood Wassermann. The spinal fluid can be easily obtained through a cistern puncture, which can be done in the office with the production of very little reaction in the majority of cases. Tryparsamide has a definite place in the treatment of syphilis of the nervous system. In early cases of general paresis satisfactory clinical and neurological results may be expected in about 30 per cent of the cases. In tabes dorsalis, it has a very definite value, and in many clinics is supplanting the use of other methods. In far advanced cases of paresis and tabes there is very little clinical improvement and in these types of cases malarial treatment or fever therapy is indicated, followed by the use of tryparsamide. The chief obstacle to the use of tryparsamide is a tendency to the production of amblyopia. Permanent injury to the optic nerve is not frequent and may in part be guarded against by a careful ophthalmological examination of all patients before and during treatment. In sexual neurasthenia, where the rapid coitus is due to a weakening of sexual muscles which are not strong enough to remain in a state of contraction for a normal period, the treatment is essentially stimulating in character. Hydrotherapy and electrotherapy are of some value in stimulating the reflex mechanism of erection. Dr. Richard Kovacs, in a personal communication to the author, states as follows: "I still feel that in cases of functional impotency, the static wave current would be my first choice because it has given me very acceptable results in a number of cases. If no static wave current is available, and also in cases of chronic prostatitis and seminal vesiculitis, diathermy would be the next measure to consider and, if combined with the recently introduced low-wave generator, it should favorably compare with results from the static wave current." I am using the galvanic and sinusoidal currents to the prostate in this type of case.

V—Psychic impotence is that condition in which the impotence is caused by inhibitory influences from the higher centers. In this type the end organs and the sexual centers are healthy, but the action of the sexual centers is interfered with by inhibitory influences from the higher centers. There may be a complete absence of sexual desire, the patient being entirely frigid, or an absence of normal desire, this being replaced by perverted impulses. More often, however, normal libido is present, but erection is inhibited because of fear of venereal disease, fear of being caught in the act, inexperience, distraction, fright, disgust of the partner, fear of being impotent on account of youthful masturbation, etc.

In this type of impotence, psychotherapy plays an important rôle, for the cases are primarily of psychic origin, while in other cases, with an organic basis, the symptom is usually aggravated by the patient's mental condition. If the psychological treatment of the patient proves too difficult for the practitioner, it will then become necessary to enlist the help of a trained psychiatrist. The form that this treatment should then take may be left to the expert; his approach to the problem usually consists of explanation, suggestion, encouragement, and such psychoanalytic technic as may seem advisable in each case. Hypnotism has been employed with success in some cases.

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873 St. Marks Avenue.

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**Heat in Surgical and Orthopedic Conditions**

A. Bruce Gill, Philadelphia (*Journal A. M. A.*, Jan. 4, 1936), points out that in traumatic conditions (which include fractures, traumatic synovitis, contusions, muscle sprains, Volkmann's contracture, bursitis and tenosynovitis), inflammatory conditions, chronic backache and chronic arthritis the application of heat, followed by massage, may be of value. The use of heat in surgical conditions is not to be considered alone but only in connection with general surgical principles. Its benefits often are obtainable only by the coincidental use of massage, for which it paves the way. Heat may be applied by means of hot fomentations, hot water bottles, electric pads, diathermy machines or bakers. The choice of the method may vary with the nature of the condition which is being treated. The author has found that applying heat by a baker is more valuable, in many of the conditions mentioned, than any of the other methods considered. A baker may contain electric light bulbs, a resistance coil, or a gas burner. The higher the temperature employed, the greater must be the care exercised to keep the skin covered with layers of flannel or woolen blankets to avoid blistering. The length of each treatment is usually about one-half hour. Following the application of heat, a thorough massage should be given. The parts should then be kept warm and not cooled off rapidly by allowing the patient to go out into the cold air immediately after treatment.

# Clinical Notes, Suggestions and New Instruments

## The Treatment of Epilepsy With Ergotamine Tartrate

• I. J. Karlsberg, B.S., M.D., Fall River, Mass.

### Introduction

FOR the past half century many investigators have noted a distinct relationship between migraine and the convulsive state. A review of the literature reveals that S. A. Tissot[18] was the first to observe and to postulate this specific relationship between the occurrence of migraine and "idiopathic" epilepsy. Of the same opinion were Liveing,[8] Hare,[6] and Féré,[4] the last stating that he found migraine in the ascendants and descendants of persons with epilepsy. Many other investigators appeared to have similar opinions on this subject. D. A. Thom,[17] in 1915, wrote that the hereditary factors causing migraine were interchangeable and might appear as epilepsy in the parent and as migraine in the offspring or vice versa. Lennox and Cobb,[10] in their excellent work on epilepsy, state that "many authors believe that migraine attacks are but sensory seizures." Morgan B. Hodskins[7] writes as follows: "The *successive* association of migraine and epilepsy (in the same individual) is not uncommon. It is an established fact that some epileptics for a number of years previous to the onset of epilepsy suffered with attacks of migraine. As a rule, attacks of migraine disappear when epilepsy begins. This 'conversion' of migraine into epilepsy, according to Walker, occurs in about 10 per cent of patients with migraine. Ulrich has found that in 500 cases of migraine 12 per cent eventually become epileptics . . . Migraine and epilepsy have some features in common. The prodromal symptoms and the immediate warnings (aura) of the attacks may be alike in both migraine and epilepsy. Both are usually followed by exhaustion and sleep. Both migraine and epilepsy occur in individuals who show signs of constitutional neurovegetative instability. The hereditary background in both is very much alike; asthma, allergic states, angioneurotic edema, psychoneurotic and psychotic disturbances frequently occur in the families of patients who suffer from migraine or epilepsy."

In 1930 F. A. Ely[3] studied 104 migrainous patients, 171 "idiopathic" epileptics, and 100 normal controls. He found that about 60 per cent of the patients with epilepsy gave ancestral histories of migraine, as compared with 17 per cent of normal persons. He concluded that "there is a preponderance of evidence indicating some definite relationship between migraine and epilepsy."

Stanley Cobb,[2] in 1932, investigated the incidence of migraine in over 9,000 relatives of approximately 1,000 nontraumatic and noninstitutional epileptics and in relatives of 235 epileptics who had suffered head trauma. In this investigation he had 250 normal controls with almost 2,000 relatives. From these data Cobb found that of the relatives of the control group 15 per thousand had migraine, as compared to the relatives of epileptic patients of whom 43 per thousand suffered from migraine. It was also noted that of the relatives of those epileptic patients who had suffered from *head trauma* (symptomatic epilepsy) only 14 per thousand were found to have migraine.

Assuming that a special relationship positively existed between migraine and epilepsy, certain investigators[1] attempted to provoke headaches in migrainous individuals by means of hyperpnea, a procedure which induces convulsions in about 40 per cent of epileptics.

Many contrary opinions and investigations [5 19 14] have been expressed and made to disprove this relationship between migraine and epilepsy. However, the consensus of the most worthy opinions appears to be that there *does* exist some relationship. And yet, there is the possibility that this relationship is not a specific one, as there seems to be a similar relationship between migraine and other neuropsychiatric disorders, such as trigeminal neuralgia, tic, constitutional inferiority, manic-depressive psychosis, etc. [12 13]

### Treatment of Migraine

In the treatment of migraine many drugs have been used with varying degrees of success. For the most part these drugs are sedatives, which often have little or no effect upon the severe migraine attack. Although ergotamine tartrate N. N. R. (gynergen, Sandoz) has been used for almost a decade in the treatment of this disorder, it is only during the past few years that this drug has been used in any large series of cases. Tzanck, [20] in 1928, noted marked improvement in many patients and reported a few as "almost cured." Several other investigators have reported favorable results with the use of ergotamine tartrate in migraine, the best controlled series having been studied by Lennox.[9] The latter found that there was an abrupt termination of the initial attack in 40 of 45 migrainous patients. He states that "the immediate results in most patients are gratifying." Brock, O'Sullivan, and Young[1] concluded from their investigations that "in the relief of headache the most striking benefit was obtained by the hypodermic injection of ergotamine tartrate."

The mechanism involved in the beneficial effect of ergotamine in migraine has not yet been determined (nor, for that matter, is the pathogenesis and the intrinsic mechanism of migraine precisely known). However, Pool and Nason[15] venture to suggest that "the clinical relief of the headache of migraine by the administration of ergotamine may be related to dural vasoconstriction." Whatever

the mechanism may be, clinical experience with this drug seems to indicate that it is a very useful addition to our armamentarium of drugs to be used in migraine. In my own limited experience with this drug, I have found the relief of the headache following the injection of ergotamine tartrate very striking in almost every case.

## Treatment of Epilepsy

A little over seventy years ago, the bromide salts were introduced in the treatment of epilepsy, and although many other methods of therapy and drugs were used during this time, the bromides apparently gave the most satisfactory results. In 1919 phenobarbital was first used in a large group of epileptic patients with most gratifying results. Since then it has replaced the bromides and is now considered *the* most effective symptomatic remedy in the management of epilepsy.

However, occasionally there are cases that will not respond to either the bromides or to phenobarbital, when many other remedies are used with very little consistent success. Many of these refractory cases, it appears to me, occur in women whose convulsions are associated with the catamenia.

Since there seemingly exists some definite relationship between migraine and "idiopathic" epilepsy, and because there have been so many favorable reports in the literature, as well as several excellent results in my own cases, from the use of ergotamine tartrate in migraine, I felt that one might get similar good results with this drug in the treatment of certain selected cases if idiopathic epilepsy which did not respond to the ordinary drugs. Although ergotamine tartrate, N. N. R., was given to only two of my cases with epilepsy, I feel that the results are such that this early report may stimulate the empirical use of this drug by other clinicians who have access to a large number of epileptic patients.

Ergotamine tartrate, which is sold under the trade name of gynergen, is marketed in tablets containing 0.001 gm. (1.0 mg.) of the drug; or in ampules (1.0 cc. or 0.5 cc.) containing either 0.0005 gm. (0.5 mg.) or 0.00025 gm. (0.25 mg.). It is the specific alkaloid of ergot; its effect on the sympathetic nervous system is inhibition of both the augmentor and inhibitory endings.[10] It is the pharmacologic antagonist to adrenalin. The drug causes in many cases a moderately increased flow of blood through the brain, which is probably secondary to an increase of the systemic arterial pressure (Lennox and Gibbs).[11] According to the experiments of Nason and Pool,[15] it also causes constriction of the dural arteries, constriction of the arteries of the skin, and a decrease in the pulse rate.

In the two cases reported below this drug was administered by mouth, unless the patient was having a severe or moderately severe headache at the time the drug was to be taken orally. Instead, one-half or one cc. (.25—.5 mg.) was given intramuscularly. The usual oral dose was two or three tablets for one or two days previous to the expected convulsion. In both of my cases the convulsions were associated with the catamenia, in one just previous to and in the other during menstruation.

## Report of Cases*

*CASE I. History*—Mrs. H. Y., a thirty-six-year old Jewish housewife, was first seen at my office on Oct. 3, 1934. She complained of having had "convulsions" for the past nine years (since twenty-seven years of age), the last one having occurred early in the morning of the day of this visit. Except that her mother died at sixty-two years of age of diabetes (mellitus), there was nothing calling for remark in the family history; there were no known neuropsychiatric disorders in the family. In the remote personal history it is stated that she was born at full term and was normal in development both physically and mentally. She had measles and whooping cough in early childhood from which she made a complete and uneventful recovery. Catamenia began at fourteen years of age and has always been normal. Patient married at nineteen years of age and her first child was born one year later. At this time there developed a pelvic peritonitis; one year later she was operated upon, the report being "a right salpingo-oophorectomy, a left salpingectomy, and an appendectomy." In July, 1927, about seven years following this operation, she had her first spell, for which she was unable to give any cause. These convulsions usually occurred in bed early in the morning, and almost always *one or two days previous to the expected menstruation.*. She had about one or two *grand mal* seizures every month; during the past few months they were increasing in number. There were no aurae, and the attacks were always followed by a period of confusion and exhaustion. When she awoke she suffered with severe headaches. She stated that during the past few months previous to her first visit to my office she had had spells on August 8th, September 6th and 23rd, and on October 3rd. Menstruation occurred on August 9th, and September 8th; her next expected period was October 6th.

*Examination*: Physical examination showed a well developed and nourished, healthy appearing woman. Examination of eyegrounds, head, neck, chest, and abdomen was negative. The neurological examination was normal. Mental examination was negative; no mental retardation; memory and insight were good. Patient admitted easy irritability and excitability. She was inclined to worry a great deal. Examination of the urine and blood and x-rays of the head were negative. Hinton was negative. During the past seven years patient had taken luminal, bromides, whole ovary, etc., seemingly without affecting the frequency or the severity of the seizures. In fact, she stated that they were becoming even more frequent.

*Treatment*:—Patient's first visit was on October 3, 1934. Her next expected menstrual period was to be on October 6th. As she felt that she might have one or two more convulsions previous to this period, I directed her to take ergotamine tartrate, one tablet (1.0 mg. of the drug) three times daily during the following days until menstruation had started. At the same time, she was informed that this medication was to be given her as an experiment; she readily agreed to the trial use of the drug. After having taken six tablets menstruation began on October 6th as expected, no seizures having occurred. Since then she has taken from one to six tablets of ergotamine tartrate previous to each expected period without the occurrence of a single seizure. On two occasions she suffered from severe headaches two days previous to her catamenia. One half to one cc. (0.25 to 0.5 mg.) of ergotamine tartrate was given intramuscularly on those occasions. The headaches ceased within one half to two hours following the injection and menstruation occurred without any convulsions preceding it. She has had no untoward reactions from the use of this drug.

*CASE II. History*—Mrs. H. M., a twenty-five year old English housewife, was seen at her home on November 4, 1934. She had had an epileptic attack and was in a semi-stuporous condition when I arrived. Later I was informed that she had been having convulsive seizures for the past ten years. There was nothing remarkable in the family history; there were no known neuropsychiatric disorders in the family. She was born at full term and was normal in development both physically and mentally. She had measles, diphtheria, chickenpox, and mumps in

* The ergotamine tartrate (gynergen) used in the treatment of these cases was supplied through the courtesy of the Sandoz Chemical works of New York City.

*(Concluded on page 44)*

# The Use of Alcohol to Relieve Intractable Pain

• Otho C. Hudson, M.D., Hempstead, N. Y.

THE severe pain caused by malignancy in its terminal stages is most difficult to relieve. The use of morphine sulphate, surgical procedures, such as cordotomy, and more recently alchol have been tried to give the patient relief.

The literature is becoming more voluminous on the use of alcohol for the relief of pain. It is used in malignancy of primary or secondary origin. In severe cases of gangrene of the foot or toes, destruction of the sensory nerves with alcohol may be done when other surgical procedures are refused or cannot be performed.

The indication for the use of alcohol is intractable pain. Malignancy with its hopeless outlook gives the largest field of application. The methods of use are paravertebral block and intraspinal block. Paravertebral block is much more difficult to do and the results are less satisfactory, as I will show in some of my cases.

The intraspinal block technique is quite simple, although due to the patient's pain, muscle spasm and inability to move, the optimum position is rarely obtained. Thus the technique becomes more difficult with the improper position of the patient. The best position is with the patient on a hard bed lying on his side, keeping the extremity uppermost that is most painful. Patient is rolled slightly ventrally. A small hard pillow is placed under the pelvis to elevate that portion of the body. A lumbar puncture is made between the first and second lumbar vertebrae. When the spinal fluid drops out of the needle one is ready for the injection. Using a tuberculin syringe, 0.5 cc. to 1. cc. of 95% alcohol is very slowly injected into the spinal canal without withdrawing any fluid. The needle is removed and the patient kept in that position for twenty or thirty minutes.

The patient will usually get some burning down one or both lower extremities and a sensation of numbness down the uppermost extremity. The pain is relieved to some extent immediately or may miraculously disappear.

The complication that one may have is paralysis of the bladder or lower extremity, which usually clears up.

### Case Reports

J. K., female, age 46. Had severe pain along the right twelfth dorsal nerve due to active tuberculous disease. Paravertebral block of the right eleventh and twelfth dorsal nerves was done, using 3 cc. of 95% alcohol. There was only slight relief of pain. This case was a failure.

G. S., male, age 62. Had marked hypertrophic arthritis of the dorsal spine with suspected metastatic malignancy. Paravertebral block of the ninth, tenth and eleventh dorsal nerves on the right and the tenth, eleventh and twelfth dorsal nerves on the left gave marked relief. Later the pain returned and after deep x-ray therapy there have been no recurrences. Three years later the patient is well without any pain. There has been no malignancy proven. The relief from the use of olcohol is doubtful in this patient.

S. A. H., male, age 71. Has a metastatic malignancy involving the sacrum, with a frozen pelvis. Parasacral alcohol block, using 3 cc. 95% alcohol, gave slight relief only. This case was a failure.

H. J., female, age 64. Had primary carcinoma of the liver with metastasis to the lumbar spine. Intraspinal alcohol injection was done, using .75 cc. of 95% alcohol between the twelfth dorsal and first lumbar vertebrae. Marked relief of the pain was obtained. Patient died.

J. McD., female, age 58. Had metastatic carcinoma to the pelvis and sacrum. Caudal injection of 10 cc. of 33⅓% alcohol gave relief to pain. Patient died two days later.

M. H. F., female, age 60. Had a frozen pelvis due to extensive carcinomatosis. Paravertebral blocks of the right, first, second, third and fifth lumbar nerves and of the left first, second, third and fifth lumbar nerves gave her relief of pain for three weeks each. The right side was done one week using 1 cc. of 95% alcohol in each area and the left side one week later. Five weeks after the first injection pain recurred and intraspinal block was done, using 1 cc. of 95% alcohol. This gave relief until her death.

M. B., female, age 57. Had metastatic carcinoma of the pelvis secondary to a breast lesion. Intraspinal alcohol injection of .5 cc. of 95% alcohol gave complete relief of pain. Patient stated she wanted to get up and walk. She had subjective numbness down one thigh for forty-eight hours after injection. She is free from pain at the present time, fourteen weeks postoperatively.

F. M., female, age 33. Had metastatic epidermoid carcinoma to the pelvis. Given 1 cc. of 95% alcohol intraspinally with marked relief of pain until death.

### *Conclusions*

The use of alcohol intraspinally for the relief of pain is permissible.

The severe pain of malignancy offers the widest field of application.

The procedure is safe.

Professional Building.

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### The Treatment of Epilepsy

*(Concluded from page 43)*

early childhood without any complications. Catamenia began at 15 years of age and has always been normal except that her convulsions started simultaneously with menstruation and occurred on the first or second day of the period. At that time she had one or two seizures at irregular intervals, occasionally six or seven months elapsing between them. During the past few years they had become more frequent, occurring at least once each month. Sometimes she had two or three convulsions at the time of menstruation. Her attacks began with a "queer sensation" in her abdomen, and were followed by a period of confusion. They usually occurred at night. There was no history of accidents or operations. She had never had any serious illnesses.

*Examination*:—Physical examination showed a well developed and over-nourished, rather stout woman. General examination was negative. The neurological examination was normal. There was no mental retardation or deterioration, although her general intelligence was not very great. Memory and insight were good. She appeared to be of an easy-going nature. Examination of the urine and blood and x-rays of the head were negative. Hinton was negative. During the past few years she had been taking luminal and bromides without any noticeable change.

*Treatment*: Ergotamine tartrate was administered as in the first case. One tablet (1.0 mg. of the drug) was taken three times daily on the day just previous to and on the first day of menstruation. During the first few months following the use of this drug, the patient had but two seizures, which she claimed to be much lighter than those

she had had previously. During the past six months she has had no convulsions. There have not been any unusual symptoms that might be attributed to the use of the drug.

The results in the above cases appear to justify the belief that future developments hold some promise for this form of therapy. Though the cases reported in this paper are satisfactory as to results, they are not sufficiently numerous to allow for permanent deductions or conclusions.

Finally, this therapeutic measure should be but one part of the general therapeutic program, and should be resorted to only after all other measures, such as sedatives, regulation of the diet and water intake, and the usual routine hygienic measures have been attempted.


## Summary

1. Investigations seems to indicate that there is a distinct relationship between migraine and "idiopathic" epilepsy.
2. Ergotamine tartrate, administered subcutaneously or intravenously, has been of great value in relieving the severe headache of migraine.
3. The pharmacological and physiological actions of ergotamine tartrate are briefly reviewed.
4. A report is made of two selected cases of idiopathic epilepsy in which ergotamine tartrate has been administered.
5. The beneficial results from the use of this drug justify its further trial use in selected cases of epilepsy in which all other measure have failed.



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105 High Street.


# Cultural Medicine

## Some Interesting Facts Relating to Abraham Lincoln

### Copy of a Letter from Dr. A. Ross Matheson[1] to Dr. William Browning

Dec. 20, 1935

My dear Dr. Browning:

I am deeply interested in the reprint sent me as I am interested in all history in any way relating to Abraham Lincoln.

It was my privilege to have seen Mr. Lincoln during the campaign of 1860, also several times during the Civil War. I camped for a short time on the farm where Lincoln was born in Kentucky at the foot of Muldraugh's hills [Meade County] and not for from New Haven [Nelson County] R. R. station.

I saw the remains of the little log cabin where Lincoln was born. All that remained of it were three rotten logs, a door sill and about 3 feet in height of chimney built of common field boulders and Kentucky clay—not any evidence of lime or cement in its construction. It appeared to be about 18 x 24 feet.

The cabin that is being exhibited was not in existence in 1861.

The proprietor of the Lincoln farm and the farm adjoining in 1861 knew Abe who was 9 years his junior from birth up to the time they moved over into Illinois and personally told me that the remains shown me was [were] all that was left of Mr. Lincoln's birth place.

Over the hill and about a mile away I met Mrs. Burgess, 93 years of age, the mother of James Burgess of the 15th Kentucky Vol., Union Army. She had acted as midwife at the birth and she assured me that Abe was the homeliest baby she had ever washed. She said it was a dreadful stormy night, a sign of the storms through which our beloved President should pass.

Your reprint was very interesting. I was not acquainted with these facts of birth. The medical profession should receive some patting on the back for producing such men as Seward, Stanton, Hay, Davis and Colfax.

I am very truly yours,
(Signed) A. Ross Matheson

Brooklyn, N. Y., November 27, 1916

[1] Dr. Ross Matheson, as he was familiarly known, was a member of the First Regiment, Michigan Infantry, in the Civil War, first attending physician of the Methodist Episcopal Hospital, Brooklyn, and in 1889, President of the Medical Society of the County of Kings, and known as a careful observer.

# Economics

*Department Editor:* THOMAS A. McGOLDRICK, M.D.
Assisted by LEWIS A. KOCH, M.D.

# Plans for Group Medical Care

### THE CONSOLIDATED GAS PLAN AND OTHERS

*Development:* With the gradual mechanization and industrialization of American life, new forms of medical practice have made their appearance. These plans and schemes have in the main been introduced since the World War and their rate of inception has undoubtedly been stimulated by the recent depression. In nearly all instances, the established relationship and mutual responsibility between the patient and his physician has been altered by a third person or party. Most of the methods involve in some degree the principle of insurance whereby a person, group of persons or an organization offers to furnish to the public for a fixed charge (usually attractively low) a partial or complete medical service by means of contractual agreements with a relatively few physicians. Most of these plans are organized for the income class by lay individuals or organizations with a profit motive or as mutual plans seeking to gain medical service at substantially reduced rates at the expense of the medical profession. There have been very few instances where plans have been formulated to care for the indigent or subnormal income class of the population except by organized solicitation of the free services of the profession.

*Examples:* A few of the larger organizations which have entered the field of medical service are: Public Health Institute, National Medicine, Inc., United Medical Service, Inc. (all of Chicago); Columbia Casualty Company (Pacific States); National Hospital Association (Oregon, Washington, California, Idaho); The Bridge Clinic (State of Washington); American Medical Insurance Society (Oklahoma); American Peoples League (Chicago—Negro); Los Angeles Record Medical Service (thrown in with your subscription); Physicians and Surgeons Hospital Association (Oregon); Health Promotion Service (Tennessee); United States Travelers Hospitalization Corporation (barred from New York State by Insurance Laws).

Some of the above and many similar plans have hardly outlived the stock selling and organization period. Nearly all offer no choice or but limited choice of physician and in all the physicians are underpaid. In the case of the better organized insurance systems (Columbia Casualty Company) complete disruption of the profession has followed in every community in which such plans have become established.

*Requirements for all Acceptable Plans for Group Medical Care:* Following the tenets of the "Ten Principles" of the American Medical Association, the Committee on Medical Economics of the Medical Society of the County of Kings has established the following minimum requirements which must be met in any plan for group medical care:

1. Free choice of physician: The patient must retain the privilege of freedom to choose any physician licensed to practice in the community who is willing to give service under the rules and conditions established.
2. Personal relationship between patient and physician: The personal relationship between the patient and his physician must not be interfered with by a third party.
3. Hospital care: The patient and his physician must be free to select any qualified hospital willing to extend care under agreements and conditions established. Institutions cannot contract nor agree to furnish medical (M.D. professional) service. The medical profession considers pathological and x-ray diagnosis as medical services.
4. Medical Society Cooperation: Cooperation with the County Medical Society and approval of the Medical Society of the State are essential in any plan. The County Medical Society is prepared and willing to prevent abuses and adjust disputes affecting any or all parties.
5. Benefits limited to individuals below the comfort level standard of incomes: No plan for group medical service will be approved which extends the benefits to individuals whose annual income is in excess of the following (adopted by the Economics Committee of the Medical Society of the State of New York): Single person, $1,000; married couple, $1,500; per each dependent, $250.
6. Extension of Benefits: Medical service benefits may be extended to dependents only.
7. Fee Schedule: The schedule of fees paid by the insured's association or society for medical service in the home, office or hospital must not be less than the minimum schedule of fees established by the Workmen's Compensation Law. Supplementation to be made by a joint committee representing all affected parties.

### EXAMPLES OF APPROVED PLANS

1. *The Binghamton Plan:* Location, Binghamton, N. Y. Population, 130,005.
   *Origin and Control:* Started with Spaulding Bakeries. Extended to three other firms. Financial control with firm. Check-off and employer contribution according to wages. Extension limited to dependents.
   *Scope:* Full medical service up to limit of $50 for house and office calls and $350 total per year. Cash benefits to ten weeks. Limited dental care; thirty days' hospitalization.
   *Methods:* Completely free choice of physician. Cooperation with county medical society. Approved by Medical Society of the State of New York. Fee schedule.
2. *The Brattleboro Plan:* Location, Brattleboro, Vt. (R. M. Bradley, 60 State Street, Boston, Mass.). Plan much as above except insured pays first $30 of the cost of his medical illness.

### THE CONSOLIDATED GAS PLAN OF NEW YORK CITY

*Inception:* Early in 1935.

*Origin and Control:* Began in 1902 in Manhattan by Mutual Aid Society of employees of original Consolidated Gas Company. Present plan an extension to all affiliated companies. Financial control with firm. Employee check-off (5/9 of 1%) from weekly salaries (range $17 to $40 per week, average $32.40).

*Scope:* Assures complete medical, surgical, and limited dental service to the 40,000 to 50,000 employees of the Consolidated Gas and Affiliated Companies. Unlimited hospitalization as ward patients. Cash benefits. Life insurance benefits.

*Methods:* Company doctors on contract for home and office care: Remuneration on a per call basis at fees less than prevailing rates for patients of this income status. Agreements with certain hospitals to extend unlimited institutional, medical and surgical care in the wards at $4.00 per day. Physicians on hospital staff paid nothing. No cooperation with medical societies.

*Criticism of the Plan:*

1. *Free choice of physician denied:* Contract doctors employed for home and office care remunerated by the company on a per call basis at less than prevailing fees for like service to individuals in same economic status.
2. *Free choice of hospital denied:* The plan in its inception included but one hospital in each of the major boroughs with which special agreements were made for

*(Concluded on page 50)*

# The Determination of the Cause of Death

• M. Edward Marten, M.D., Deputy Chief Medical Examiner, City of New York, Consultant in Pathology, St. Catherine's and Wyckoff Heights Hospitals, Brooklyn, N. Y.

THE cause (or causes) of death so frequently becomes a subject of controversy and difference of opinion that it suggested itself to me as a topic for profitable discussion. Having made inquiries into the causes of death in more than 15,000 individuals, I will attempt to draw upon this experience in an effort to simplify this important and involved question.

Generally, classification of causes of death is attempted for the purpose of acquiring more knowledge, but it has a more intimate and serious import to each of us as physicians when this cause becomes a matter for legal consideration.

Many of the earlier views concerning life and death, health and disease, which have given way to more accurate conceptions, still hold a certain sway and are perpetuated by traditional forms of speech. One of these is that disease is an entity, something foreign to the body which may enter from without, and with which the body may struggle and fight, which it may conquer or to whose ravages it may succumb. It will be wise for us all to remember that disease is not a thing, but a process. It is an abnormal activity of certain of the physiologic functions of the body in response to injury. This may or may not be associated with appreciable morphological alterations of the body structure. It is those agencies and conditions to which the body has *not* adapted itself, which, swaying its normal capacities now one way, now another, induce the functional aberrations and structural alterations by which disease is manifested.

It follows from this that the functional abnormalities and the structural alterations which make up the signs, symptoms and lesions of disease involve the expression of no new functional capacities which the normal body does not possess. These may be diminished or exalted; they may be perverted or abolished. But the body in disease manifests no new functions, reveals no new capacities. Without going into detail, we may say that disease is caused by excitants; that these excitants of disease are extremes of environment or create extremes of environment to which the body lacks capacities to adapt itself.

The continuance of the state which we call health depends upon the approximate maintenance of the conditions to which the body has become adapted, but beyond certain rather ill-defined limits, the adaptative capacity cannot go and disease results.

The maintenance of the normal life of the body involves a normal mechanism and a constant and successful adjustment to the conditions under which it is placed. The adaptative capacity of the body is in many ways so effective that it can maintain its normal structure and functions in spite of adverse influences. Thus, for example, the body can adapt itself, within the limits of what we call health, to alterations, deficiencies, or excesses of nutrient material, to varying extremes of heat or cold, moisture or dryness, to light, to the x-ray, to electrical tension, to animal and vegetable parasites, to various poisons coming from without or resulting from faulty metabolism, and to mechanical trauma.

Let me point out that the adaptative capacity may vary greatly in different individuals, depending on age, sex, race, heredity, and previous exciting lesions which limit the adaptative capacity, so that adverse conditions which one individual can sustain may be totally destructive to another.

Logically following the above concepts, when diseased states or conditions arise from the above factors the body vicariously attempts to protect itself to the limit of its adaptative capacities or to the point where it can no longer endure and a state of death follows.

Now, in arriving at a logical conclusion as to the cause of death, all the above factors must necessarily be considered, and arguing backward, we must evaluate the evidence in hand in each given case. The evidence to be considered is the history of the deceased, the clinical findings, and the complete autopsy including histological, bacteriological, and chemical researches.

Having conscientiously gathered all these data, we must ask ourselves certain fundamental questions: How do these facts square with our past experiences in similar cases? Are the conditions and facts found such that they are compatible with life? Are the findings competent producing causes of death? The rule of crystallized common sense must be here applied in order that a logical, fair and honest answer may be given. In short, what is the preponderant evidence that permits one to arrive at a certain conclusion—remembering that a chair cannot stand on two legs alone.

Now it must be admitted that in certain cases the conclusion as to cause of death can be easily arrived at. Injuries, such for example as decapitation, fractured skulls, disembowelment, or gunshot wounds of vital organs, are not compatible with life, and no further search for a cause is necessary. Difficulites, however, do arise because of our lack of knowledge.

If we could reduce all diseases to their excitant causes the matter of classification of deaths would become much more simple. There are, however, many diseases and conditions for which no etiological factors have been discovered. Most diseases are labeled under the name of their excitants:

e. g., diphtheria, tetanus, T. B., trichinosis, etc. Where no definite etiological factors are known usage has christened the condition by perverted anatomy that exists in the body, e. g., congenital malformations, myocarditis, nephritis, cirrhosis, arteriosclerosis, cancer, essential anemia, etc. A good many conditions have neither discernible pathology nor etiological factors, e. g., acidosis, uremia certain forms of diabetes, epilepsy, and certain psychoses. Here, the history and clinical findings become extremely important in arriving at a conclusion. On the other hand, certain intermediary cases arise where a definite history of casual factors is obtained and yet yield absolutely no autopsy evidence, e. g., deaths by heat, sunstroke, electricity, starvation, and exhaustive states, and conclusions in these cases must be carefully arrived at by the negative evidence at autopsy and corroborative proof of witnesses and clinicians. The proof here cannot rest entirely on the autopsy, for except for the absence of lesions there is no proof.

In a great many if not most of our deaths from exogenous poisons, no pathognomonic findings exist at autopsy and wherever this obtains it is absolutely necessary for the autopsy surgeon to bear this in mind and see that a careful chemical search for causative factors be instituted. Another group of cases, that usage has ascribed to ptomaines, are not caused by ptomaines at all, for they are due to parasitic organisms, e. g., the botulinis and enteriditis group, and careful bacteriological researches must be made to establish or rule out these excitants.

In my own personal experience, and no doubt this coincides with that of others, the most difficult cases arise in those that have a definite medicolegal aspect, for example, in (a) double indemnity cases where the question, "Did this injury produce death?" comes up; (b) in accident cases that come to litigation; (c) in deaths where allegations are made as to causal factors in compensation cases, and worse yet, (d) that group where death may be alleged to have been caused by that vague "something" that is described as "aggravation of a pre-existing lesion," meaning was death hastened by this or that? In general, may I say that we cannot afford to hem and haw, for our arguments lose force; at all times, we must be honest with ourselves.

(a) Under the first caption, namely, a case of double indemnity, I recall to mind a case where an elderly gentleman, aged about 65, fell from a trolley car. He carried a $25,000 policy with double indemnity if death occurred by common carrier. His fall caused a fractured humerus; he died about three weeks after the injury. Autopsy confirmed the fractured humerus and disclosed a hemorrhage into the muscles of the chest wall and a confluent bronchopneumonia. It was my opinion, and I so stated in my proof of death, that death was caused by pneumonia following fracture due to fall. The defense represented by an able medical witness contended that death resulted from influenzal pneumonia which was epidemic at this time. I am sure that this witness was more of a knave than a fool, for *experience teaches* that fractures in old age are commonly followed by pneumonia, which is a competent producing cause of death.

(b) At times, certain cases having both a criminal and civil legal aspect tax one to the utmost for proper conclusion. I recently had a particularly hard one. This was the case of a boy brought to Kings County Hospital, on April 17th, who was in an auto accident; he was unconscious at the time he reached the hospital. X-ray examination and careful physical examination showed no discernible trauma. Repeated spinal taps showed no abnormal findings. About three days after admission he regained consciousness but began to have fever and discharging ears. The Ear Service called in consultation operated on the child; a double mastoid operation was performed; following this operation, spinal tappings showed infected fluid. The boy died on the 30th of April. Autopsy showed a thick, purulent exudate over the brain; operative wound on one side was draining pus; no fractured skull, no visible brain lesions and a one-sided pneumonia. It seems to me that from the viewpoint of a criminal prosecution for manslaughter, it would be totally unfair to say that death resulted from the injury *per se*. From the standpoint of a civil suit it must in all justice be granted that if the child had not been injured he would not have been at the hospital and subjected to the risk of operation, which probably had some relation to his death.

(c) In cases involving causal relationship, it is quite apparent that there can exist every shade and degree of injury and that, in proportion that an organ or a part is compromised, it diminishes the functional capacities of the body as a whole, and that no one can ever mathematically fix the contribution that a certain injury gives to the causation of death. In these cases, it is my opinion that the fair rule that should guide one's decision is to ask oneself the question, "What has been the outcome or general rule in the light of experience in like or similar cases?"

(d) Now comes the last type, the bugbear of all, experienced with compensation testimony, namely, *aggravation*. Here is where speculation seems to run riot and the sky becomes the limit.

If we are to follow out in logical sequence the foregoing premise, it also follows that a given body has a quantitative algebraic total of capacities or resistance, since it is a complex, co-ordinated mechanism, and that any trauma, however small, as for example, an uninfected abrasion, will detract or subtract from this sum. Therefore, any pre-existing lesion becomes aggravated in this sense, and from this viewpoint, any question such as "Did this injury aggravate a pre-existing condition?" leaves room for but one answer, and that in the affirmative, and yet how unfair this answer may become. I will illustrate by two actual cases:

One, an adult male, age about 40, was working with an electric drill operated by the ordinary 120 volt commercial current. He was alleged to have been shocked; he stopped working when this happened and then shortly resumed drilling. About two weeks afterward he was taken ill; complained of severe headache and went to the hospital, where he died. Autopsy disclosed an abscess of the brain. The abscess certainly was a sufficient and competent

*(Concluded on page 58)*

# Cancer

*Department Edited by* JOHN M. SWAN, M.D. (Pennsylvania), F.A.C.P.

EXECUTIVE SECRETARY, NEW YORK STATE COMMITTEE OF THE AMERICAN SOCIETY FOR THE CONTROL OF CANCER

Assisted by CHARLES WILLIAM HENNINGTON, B.S. (Rochester), M.D. (Hopkins), F.A.C.S., *German Literature Editor*, and UMBERT CIMILDORO, A.B. (Cornell), M.D. (Rome), *Italian Literature Editor*.

## The Diagnosis of Gastric Cancer

• Charles W. Hennington, B.S., M.D., F.A.C.S. Rochester, N. Y.

THE early recognition of gastric carcinoma is beset with difficulty. Can we hope for greater accuracy and earlier diagnosis by making use of any of the recent developments in the methods of visualizing the lining of the stomach? It is proposed in this review to discuss three procedures: the use of flexible gastroscope of two quite distinct types; the employment of a small photographic apparatus sent down into the stomach blindly at the tip of soft rubber stomach tubing, and the use of certain procedures in x-ray methods by which the gastric mucosa is covered with a contrast medium which is displaced by compression of the abdomen in order that the stomach lining may be coated with but a small amount of opaque medium. The object of the last method is to demonstrate the interior surface relief or topography either by fluoroscope or by film.

As this reviewer is not able himself to carry out any of these methods of examination, at least he is in the position of discussing their probable value without personal bias. We all recognize the need of greater precision in early diagnosis of gastric cancer. Early exploratory operations are gaining favor. Most of us are properly interested and are willing to give sympathetic reception to every modification and every appliance of promise. With this point in mind we have gone over many articles in the foreign journals and shall attempt to summarize, as well as possible, this controversial literature.

The advance in gastroscopy consists in the introduction of two entirely different types of flexible scopes, intended to overcome the discomforts and dangers of the rigid instruments long in use. Flexibility is achieved in different ways in the two types of appliance and is based on entirely different principles. Both are remarkable instruments and excite our admiration. In each case we examine the stomach lining through a lens system passing the image through a flexible elastic tube constantly adjusting itself as the scope is forced into new positions to visualize various regions. The Wolf-Schindler*(4)* gastroscope of 1932 and the Korbsch*(15)* gastroscope of 1933, though both of German origin, are now widely distributed in various countries. The difficulty inherent in the old rigid open scopes was the danger attending their introduction and the unsatisfactory visualization of certain regions of the mucosa. The advantages of direct view and the possibility of immediate photographic recording of what is seen are lost in the new scopes. It may be recalled that an instrument was once in temporary use which could be made flexible for introduction and then made rigid by a series of levers for open-tube observation; but this method was not without dangers. Schindler and his capable instrument-maker Wolf devised a tube flexible at the distal portion and containing a series of lenses which permits constant flexibility within a field of view of 60 degrees. The Korbsch scope secures its flexibility by its very small calibre and its curious optical system. Already others are making further modification of these instruments, and this gives one the impression that not all the difficulties and dangers are entirely overcome.

The photographic apparatus at the tip of a flexible soft rubber tubing is an American device commercially and goes by the name gastrophotor. It is a tiny camera for direct photography of the interior of the stomach and has been in use a number of years both here and abroad. It is a modification of several earlier methods of photographing the gastric mucosa. Its advantage is found in the flexibility of the tubing and the freedom from danger and from discomfort to the patient except that the patient might become a bit weary at the repeated insertion of the tube. Of course, the views are taken blindly and at random; however, individual photographs may happen to have a fortunate view of a lesion. At each exposure sixteen films are exposed simultaneously in various directions. It is a method depending considerably upon chance. Gastroscopists will continue to take photographs through the open rigid straight scopes as a rapid method of recording a view of what has been observed with the naked eye. But this method of photographic record of observations is not applicable to the flexible scopes as it was so easily suitable to the former type of rigid tubes. The method of the gastrophotor depends for its success on the taking of a multitude of exposures in the hope that some may prove to be fortunate. A number of very remarkably happy pictures have been published. If a sufficient number of exposures are taken by repeatedly reloading film into the instrument there is no reason why a few good views should not be obtained.

The modification of the x-ray method consists in using a small amount of opaque medium with the intention of coating over the irregularities of the interior surface of the stomach and thus demonstrating the topography of the stomach lining either on the fluoroscope or on film. Only a small amount of the contrast medium is used and this is displaced by suitable pressure upon the abdominal walls. In this way it is brought into contact with every portion of the mucosa and adheres to the defects of the surface. It seems impossible to assign any definite date to this procedure or to give all the credit to any particular individuals, unless it be Forssell and Berg*(2, 12)*. Of course, even in the earliest x-ray work everywhere such pictures of lesions were observed by accident after a large part of the opaque medium had left the stomach, and these appearances were correctly interpreted. But they were accepted as fortunate happenings rather than that the radiologist set out to try to obtain pictures of this sort to supplement the usual Röntgenological examination. For quite a number of years there have been references in the German*(2)* and French*(12)* journals to this method of interior "relief," and some remarkable films are illustrated. The method is difficult but has great possibilities and supplements the classic methods of examination. It is especially valuable in the study of certain tumors which may not even be revealed by the classical methods, such as tumors in the initial stage of their macroscopic development or tumors in peculiar lateral positions. These, either because of their position or their small size, cannot be visualized by the classical methods, but the appearance of the internal gas-

tric "relief" yields important information regarding their surface and depth extension and relationship to neighboring structures. These tumor types include especially early small lesions, lateral carcinoma, exuberant tumors and certain others. This contour topography is achieved as a deliberate supplementary effort.

These methods have now been tested out by others than the persons introducing them. In some cases there are reports on a method by partisans advocating their own methods in comparison. Thus it is very interesting to note that Schindler himself wrote an article*(1)* describing his unfavorable opinion of the gastrophotor at a time, however, when he had not yet devised his own flexible scope. On the contrary, Schindler does consider the method of Röntgenologic topographic contour "relief" as indispensable and says that carcinoma can usually be demonstrated by it*(2)* except in the region of the cardia, where caution is advised in the interpretation of the x-ray findings both positively and negatively. Schindler*(6)* acknowledges that one method must supplement the other and usually the gastroscopy had better precede the x-ray investigation. Of course, the scoping cannot be carried out very well when even a small amount of medium remains coating the lining of the stomach as this naturally obstructs the careful inspection of the surface of the mucosa. Small cancers were discovered by the topographic relief method of x-ray and thereupon verified by the gastroscope*(2)*. At the date of some of these articles Schindler was not yet using his flexible scope. In later papers Schindler and others, especially Henning*(5)* and also Halmos*(7)*, describe the appearance of early cancer and make the diagnosis directly on the view seen with the gastroscope, and, in addition, are able to make observations helpful in a preliminary interpretation of operability. Apparently Gutzeit*(8)* and also Korbsch*(15)* are equally successful with the small calibered scope which is also flexible. Henning*(9)* has added a retrograde and a true prograde prism system to supplement the usual orthograde views of the Korbsch gastroscope.

Jackson*(18)* has on several occasions used the gastroscope to verify x-ray findings in patients who refused to submit to operation until they had this additional evidence to convince them of the necessity of operative intervention. Jackson says*(18)*: in quite a number of our cases a small malignant ulcerative growth was found with the gastroscope after röntgen examination was negative. Chevallier*(13)* thinks that probably gastroscopic investigation is that of choice in early malignancy. He brought one extremely early case to operation and the diagnosis of malignancy was proven. Gutzeit says*(8)* that small cancers are easily recognized and are becoming still easier as our technique improves and our experience grows. And this is a field of the greatest promise and value in the cure of early cancers. Degree of operability can be judged before the actual laparotomy. Halmos*(7)* reports that he found three cases to be cancer in which the x-ray had been quite inconclusive.

Oberholzer*(16)* describes in greatest detail the gastroscopic appearance of malignant infiltration. Almost all of them take great pains to describe the normal mucosa as well as the various lesions to be differentiated. This reviewer on reading these descriptions becomes convinced that a great deal of experience is necessary in order to interpret properly the appearances that are seen. Often two lesions of different character are present and there is danger of overlooking the more serious and usually smaller malignant lesion. Chevallier*(13)* stresses the value of gastroscopy in the early recognition of neoplasms. Jackson*(18)* has an excellent paper based on the use of both rigid and flexible gastroscopes, which is discussed by Benedict, Weiss, Schwalm and Tucker.

The interrelation of these new methods with each other and with the older classic methods is significant. Thal*(10)* gives an interesting comparison between röntgenologic findings in small lesions compared with intragastric photography. The whole matter is an intricate controversial problem as yet unsolved. It seems evident to this reviewer that the use of topographic relief x-ray is of great value and will have wide adoption. Gastroscopy is already well established and with the newer modifications becomes a method of great promise despite inconveniences, discomforts and some danger and should be used only by gastroscopists of experience. At present it is still too early to estimate the value of intragastric photography as a method in itself or as a supplement to other methods.

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Since the above review was written the excellent paper by Schindler has been published in the Journal of the American Medical Association (August 3, 1935; 105:352). It contains a bibliography of twenty-one titles.

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## Economics

(*Concluded from page 46*)

the care of these patients. More recently, however, any hospital may admit these patients and the company will extend payment at the rate of $4.00 per day toward the employee's hospital bill. Hospitals under this plan are contracting to furnish medical and surgical care which, in the opinion of organized medicine, they cannot morally or legally do.

3. *Benefits not limited entirely to subnormal income group:* Some employees enjoy these benefits who are in excess of: $1,000 per annum for single persons; $1,500 for married couples, and $250 additional per dependent.
4. *No fees included for medical or surgical care:* The institutionalized patient expects to receive free medical and surgical care by virtue of his general service status in the hospital. The profession has been informed that the employees refuse to pay for institutional medical service, that they have been treated free in municipal and voluntary hospitals in the past and they expect to receive such services free in the future. However, they have more recently offered to accept a fee schedule which is less than that for injured workmen.

### Other Recent Plans

*The A. S. Beck Shoe Company Plan:*

*Inception:* Summer of 1935.

*Origin and Control:* Organized by voluntary association of employees who contribute a specified portion of their salaries in return for limited cash benefits, life insurance benefits and medical care.

*Methods:* Company doctors on contract for home and office care, remunerated on a per call basis at fees less than prevailing rates for patients of like income status. No hospital service provided.

*Note.*—A. S. Beck Shoe Company Plan: Since its proposal officers of the Company have been in conference with representatives of the County Society. As a result the plan has been suspended and is undergoing revision in an attempt to bring it into conformity with the principles of contract practice approved by organized medicine.

*The Brooklyn Postmen's Hospitalization Plan:*

*Inception:* Outside Manhattan, December, 1935.

*Origin and Control:* Began in Manhattan as the Morgan Foundation assuring hospital care to postal employees. Present plan an extension of this plan. Involves about 3,500 employees in all branches of the service. Membership in the "association" is voluntary. Dues are about $2.80 per year.

*Scope and Methods:* Assures unlimited institutional (hospital) care as general service cases in selected hos-

pitals willing to extend service. Service to include interne service which it is hoped by the officials of the "association" will consist of all forms of medical care except possibly the most technical surgical operations. For the latter service these employees have been told that they may have to pay a private physician a fee.

The Brooklyn Postmen's Plan is an effort on the part of civil service employees to receive hospital care and medical service in the hospitals by availing themselves of the access to the general wards. As such they hope to receive complete interne care without having to pay a physician. Opposition to this plan must be by a united stand of the profession to prevent any hospital from contracting with groups of employed individuals enjoying the benefits of group hospitalization for general ward service. These employees must be admitted only as private patients.

### A Challenge to Organized Medicine

It is imperative that organized medicine must make a firm stand and insist that these plans be revised to comply with the ten principles governing all forms of medical practice. If unsuccessful there is little doubt that the commercial interests and hospitals will extend this type of service to include the greater class of the population which is gainfully employed.

### The New York State Plan

*The Gradient Plan:* It will be of interest to know that the Economics Committee of the Medical Society of the State of New York has evolved a plan which will provide adequate medical care to every citizen of the State. The details of this plan have been presented to the various committees on Medical Economics throughout the State for study and suggestions.

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## The Nicotine Fallacy

*(Concluded from page 35)*

tensity as you approach the end. It will be well to seal each individual tube and place aside for different periods of time, as the degree of reaction will be frequently increased. As you proceed, other tests will suggest themselves and you are unlimited in the number that can be made.

To find out what is in a cigarette *before* smoking requires an entirely different method of procedure. It is best done in a specially equipped laboratory by a competent chemist. However, a physician can learn much with a test tube and a Bunsen burner through destructive distillation. In the early attempts many test tubes can easily be broken but three zones of separation will be apparent from the start. At the top, the crystal-clear drops of moisture and the gases, in the middle, the tars and oils, and at the bottom, the carbon. Sir James Barrie wrote most eloquently of the charms of Lady Nicotine in the smoke that came from the *ends* of the cigarettes and cigars and the bowl of the pipe. There is only one thing wrong with this picture. No investigator or analyst or research worker has ever found the faintest trace of nicotine in this end-smoke. So passes another legend into the vapors of yesterday.

This paper has been written for one purpose, and one purpose only, and that is to bring out the fact that not only does every brand of cigarettes differ in its chemical formula from every other brand, but cigarettes of the same brand may differ over a few months time in manufacture. Furthermore, that this chemical formula in the catalytic action of heat, moisture, and the inhaled air of the smoke may and does change the smoke of the tobacco vehicle so that no nicotine may reach the lungs of the smoker. What does reach the lungs of the smoker is tar, for it is absolutely impossible for any one to take even the lightest puff without some of that smoke being taken into the lungs. With every puff the smoker unconsciously takes a deeper breath, and the air that comes through the nose mixes with the smoke and so both enter the lungs at the same time. So much is this the case that if iodine is added to a cigarette and that cigarette smoked, an x-ray of the lungs will outline its presence clearly. Not only cigarette but all tobacco smoking is not a minor but a major concern of every physician.

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2660 North 16th Street

### Sounds Familiar

Geological experts for several American oil companies deny that there is any oil in Ethiopia.

One of them declares:

*We have found not the slightest sign of any deposits of oil that have commercial value.*

Geological experts for the African Development and Exploration Company declare that:

*There is fine heavy oil in this region which is as rich as the Kirkuk region in Iraq.*

Perhaps some of these geological experts are ex-alienists!

*—N. Y. Post.*

# Contemporary Progress


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## RHINOLARYNGOLOGY

### *Helium in the Treatment of Asthma and Obstructive Lesions in the Larynx and Trachea*

A. L. Barach (*Annals of Internal Medicine*, 9:739-765, December, 1935) states that the therapeutic use of helium in respiratory tract obstruction is based on the fact that helium has a lower specific gravity than nitrogen and that a helium-oxygen mixture would be "easier to breathe," *i.e.*, less pressure required, than a corresponding nitrogen-oxygen mixture, such as occurs in air. The apparatus used for the administration of the helium-oxygen mixture (helium 80-85 per cent., oxygen 15-20 per cent.) is described. Inhalation of helium-oxygen has been used in the treatment of 4 cases of severe asthma. Subjective and objective relief was obtained when continuous asthma was present (status asthmaticus). When patients were refractory to adrenalin, this was overcome by the helium-oxygen inhalations. The acute attack of asthma was not aborted by this treatment, and the relief obtained by the helium-oxygen inhalations was not sufficient to replace adrenalin when this drug was effective. Graphic records of pulmonary ventilation during inhalations of the helium-oxygen mixture in a patient with continuous asthma showed: (1) Decrease in pulmonary ventilation; (2) decrease in pulmonary pressure; (3) relative and absolute diminution in the length of expiration; and (4) increased rest period between respiratory cycles. The decreased pulmonary pressure and swifter flow of gas in the early phase of expiration would "appear to lessen the likelihood of alveolar distention and emphysema in patients who have much continuous asthma." Inhalation of helium-oxygen mixtures relieved obstructive dyspnea in 2 infants, one with laryngeal and one with tracheal obstruction. The relief obtained in cases of respiratory obstruction during the inhalation of helium-oxygen mixtures shows the importance of "an accustomed flow of gas to and from the lungs;" the failure to maintain this pulmonary air flow is the primary cause of the sensation of air hunger in this type of dyspnea.

COMMENT

*It is difficult to tell whether helium-oxygen mixtures may be recommended for ordinary use in asthma. As an adjuvant to treatment, no doubt it is worth while. Asthma is a baffling combination of symptoms which often have an indefinite etiology. We wish that some specific remedy might be found. Of course, injections of adrenalin will give temporary relief but more than that is needed. It is surprising and gratifying to find that patients who have severe asthma are completely relieved by removal to a drier climate such as is found in Arizona.*

H. H.

### *Accessory Sinus Infection in Relation to Mastoid and Lung Infections*

W. F. Manges (*Annals of Internal Medicine*, 9:547-554, November, 1935) states that the relation of sinus infection to ear and mastoid disease and to pulmonary infection has been recognized by a number of recent writers. The most common route of invasion from the sinuses to the ears is by the Eustachian tubes, and to the lungs by way of the pharynx, larynx, trachea and bronchi. In the author's own experience, he found definite roentgenological evidence of sinus disease in 60 per cent. of 354 asthmatic patients; and of these patients with sinus disease, 85 per cent. showed roentgenological evidence of lung changes. During the past few years, it has been the author's custom to make one or two roentgenograms of the sinuses in all patients sent for a study of the lungs in which tuberculosis could be excluded. Sinus disease has been found in "a surprisingly large number." He has also made roentgenograms to include the sinuses in cases of mastoiditis, and has found evidence of sinus disease in the majority, especially in acute mastoiditis. Yet in most of these cases there were few or no symptoms indicative of sinus involvement, and the presence of sinus disease was not suspected by the patient, nor the physician. Since the local subjective symptoms of sinusitis are so few, except in cases of the fulminating type, and early diagnosis is so important for successful treatment, the author suggests that sinus disease should be suspected and a thorough study of the sinuses made in the presence of: Frequent head colds, especially if nasal discharge is mucopurulent in character; postnasal drip; persistent, prolonged cough, with or without expectoration, and with or without fever; slight changes in the character of the voice; earache or discharging ear; mastoid disease; headache or neuralgia. Complete diagnosis of sinus disease depends upon direct inspection; transillumination of the sinuses; puncture, and most important of all, careful roentgenographic study; in some cases injection of iodized oil is necessary when the roentgenological findings are indefinite or doubtful.

COMMENT

*Although we believe in a thorough study of sinus disease in all infections of the ear or lungs which are obscure, we wish to sound a word of warning against too radical instrumentation or surgery of the sinuses. In many instances the diminished resistance of the patient brings about an infection of the upper respiratory tract. It is therefore essential to build the patient up systemically as well as to treat the local condition. Injections of non-specific proteins often do a great deal of good.*

H. H.

### *X-ray Therapy in Chronic Sinusitis*

E. D. Warren (*Laryngoscope*, 45:864-867, November, 1935) reports 72 cases of chronic sinusitis treated with the x-rays; every type except atrophic rhinitis was included in this series. The x-ray dosage used was variable, but from 80 to 90 per cent. of a skin erythema has been given. In some cases 150 K.V.P. with 25 M.A. has been used with 3 mm. aluminum filter, and six minutes treatment to each area at 50 cm. distance. No attempt was made to select cases for this series, but 25 per cent. have shown marked improvement, 40 per cent. moderate improvement, 20 per cent. transitory moderate improvement and 15 per cent. no improvement. The greatest degree of improvement has been obtained in cases of

sinusitis of the hyperplastic type with or without moderately heavy expectoration, showing a thickened membrane radiographically, but without prolonged advanced infection or repeated operations. Good results have also been obtained in allergic or "borderline allergic" cases with an associated nasal infection. The chronic purulent cases of long duration and cases that have had many operations do not show a favorable response as a rule, but occasionally a case not relieved by repeated operations will show "spectacular" subjective improvement and relief of focal symptoms under x-ray treatment. The author states he is "not able to predict when this will or will not occur." In the cases treated there has never been any injury to the eyes, the sense of smell, the hypophysis or the blood vessels.

COMMENT

*We have no doubt that the x-ray specialists will welcome this new line of treatment. If there were any particular therapeutic value to x-ray treatments, it would have been recognized long ago. Many of us can recall the time when x-ray treatment of the tonsils was in vogue. It helped the specialists but did little good for the patients. The truth of the matter is that no one believes for a moment that the x-ray has any influence over infection. It may reduce hypertrophied tissue but only if it contains a great deal of lymphatic cells—which the mucosa of the sinuses does not contain.*

H. H.

## *Chronic Tonsillitis in Adults*

T. N. Hunnicutt, Jr., H. J. Sternstein and H. E. MacMahon (*Archives of Otolaryngology*, 22:744-752, December, 1935) report a study of 25 cases of chronic tonsillitis in adults, twenty to fifty-seven years of age. Twenty-four of the patients gave a history of frequent sore throat, especially during the winter months, and 11 of these had had intermittent attacks of acute tonsillitis; 20 had also had frequent head colds. Eight of the patients gave a history of cervical adenitis, of whom only 4 had had attacks of acute tonsillitis. Seven patients complained of a productive cough, and 2 of a non-productive cough. Seven had had ear symptoms; 3 of these had noted progressive deafness. Fourteen of the 25 patients had some systemic disease; 3 complained of general fatigue and debility; 4 of pain and stiffness in the muscles; and 7 of joint pains, 5 of whom had definite arthritis. The tonsils in these cases varied greatly in size; the faucial pillars were congested in 19 cases and the tonsils were injected in 4 cases. Material could be expressed from the tonsils in 20 of the 25 patients; but in only one case was there a thin yellowish exudate. Bacteriological studies were made of material obtained from the surface of the tonsils before operation; from the depths of the tonsils following enucleation; and from the tonsillar fossae after healing. *Micrococcus catarrhalis* was the organism most frequently found, with staphylococci and non-hemolytic streptococci, second and third. Hemolytic streptococci were found in four instances. Pathologically, there was no characteristic change, and the histological findings in the tonsils in these cases did not differ essentially from those found in a control series of tonsils obtained at autopsy from adults who had shown no recent symptoms of tonsillar disease. There was no relationship between the type of flora, the histological findings and the clinical symptoms in this series.

COMMENT

*Much as we desire to encourage researches of this kind, the question that comes to our mind is, "What is Chronic Tonsillitis?" It is seldom that such a diagnosis can be made from an inspection of the tonsils or the subjective symptoms related by the patient. Surface cultures are also useless. What is necessary is to massage the tonsils and note whether caseous material can be expressed from the crypts (mainly in enlarged or hypertrophied tonsils) or pus from the supratonsillar fossa. Such pus may be expressed from a tonsil which looks perfectly innocent and frequently gives rise to most serious general symptoms. A real sore throat or enlarged cervical gland is sufficient local evidence, but when the tonsil presented is small and buried, one will have to make a keen examination. In this latter class of cases, the Streptococcus hemolyticus is often found in pure culture.*

H. H.

## *Bismuth Therapy in Non-Specific Angina*

A. Montevideo and V. B. Filho (*Annales d'oto-laryngologie*, No. 9:992-1002, September, 1935) report the treatment of acute sore throat and tonsillitis by injections of bismuth. They first tried this treatment in 50 cases; the pain and general symptoms disappeared as a rule within twenty-four hours; somewhat later the tonsils diminished in size, the inflammation subsided, and the exudative membrane disappeared. Since these first cases were reported the authors and a number of other South American specialists have used this same method in a considerable series of cases. A total of 1180 cases have now been collected, in which good results were obtained in 1132, or 96 per cent., and the treatment was without effect in 48 cases, or 4 per cent. Experience has shown that the only type of non-diphtheritic sore throat that fails to respond to bismuth treatment is peritonsillar abscess. The effect of bismuth is attributed chiefly to its bactericidal action.

COMMENT

*A much more simple method of treatment is to treat the crypts directly with a 50 per cent. solution of silver nitrate, which not only has a caustic and bactericidal action but opens up the mouths of the crypts so that foreign matter is easily eliminated. We have used this method of treatment in acute tonsillitis for many years, with excellent results.*

H. H.

## *Use of Free Metallic Silver in the Nose*

L. S. Powell (*Annals of Otology, Rhinology and Laryngology*, 44:734-735, September, 1935) reports the use of a portion of exposed and developed x-ray plate, which after development is covered with free metallic silver, in the treatment of intranasal synechiae and "boggy" turgescent inferior turbinates. A piece of the darkest portion of the developed plate is cut off, shaped and introduced into the nose by means of a nasal speculum so as to separate the inferior turbinate from the septum completely. The plate is left *in situ* until the film becomes perfectly white, indicating that the metallic silver on its surface has been completely absorbed. The nasal nucosa becomes normal in appearance owing to the continuous contact of the supply of free silver. This method has proved superior to single or repeated applications of a silver salt solution.

COMMENT

*The procedure advocated is most worthy of trial. The trouble with the application of most silver salts is that no one knows how much of the silver has been applied to the mucosa. If the author is correct, one has visual knowledge of what has taken place.*

H. H.

# OTOLOGY

## *Treatment of Otosclerotic and Similar Types of Deafness By the Local Application of Thyroxine*

A. A. Gray (*Journal of Laryngology and Otology*, 50:729-750, October, 1935; also, *Laryngoscope*, 45:741-759, October, 1935) advocates the treatment of otosclerosis and "so-called dry middle ear catarrh" by the local application of thyroxine. This treatment is based on the author's theory that otosclerosis is caused by a diminished

blood supply to the organ of hearing "consequent upon a gradual failure of the vasomotor responses." Thyroxine is used in treatment, not to compensate locally for any deficiency of thyroxine in the patient's blood, as the author has found no evidence of thyroid gland deficiency in otosclerosis, but because of its local action, which is to produce an active congestion without an inflammatory reaction in mucous membrane, which lasts for a long time. In applying this treatment, a thyroxine tabloid, or part of a tabloid, is crushed to a very fine powder and mixed with not more than four or five minims of distilled water. This is introduced into the middle ear through the tympanic membrane by means of a hypodermic syringe with a needle somewhat longer than usual so that the point may project into the middle ear a millimeter or two; the bevel at the tip of the needle is "short and stumpy" rather than long and tapering. Half the maximum dose of thyroxine (1/128 gr.) was usually employed. As the puncture of the tympanic membrane is being made the needle is pushed backwards as well as inwards; when the needle is withdrawn the patient's head is bent backwards and kept in that position five or ten minutes, so as to keep the fluid as much as possible in the region of the round window. The author has treated 14 cases by this method, injecting both ears in some cases, one ear in others. There was a considerable improvement in hearing in 7 of these cases or 50 per cent.; if tinnitus was present, it was also relieved; wax began to be secreted again in 2 of the cases. Paracusis was present in 4 of the 7 cases that showed definite improvement. Treatment is indicated especially in cases with notable loss of hearing for low notes, and retention for high notes, negative Rinne, and no serious diminution of absolute bone conduction, that show no definite improvement on inflation of the middle ear. Cases in which absolute bone conduction is much diminished, even though the Rinne test is negative, or with marked loss of hearing for the high notes are not likely to be benefited. The author has not yet determined how long improvement will be maintained; it is probable that injections will have to be repeated two or three times in a year.

COMMENT

*To say that the treatment of otosclerosis is quite baffling is to express it mildly. A thousand and one remedies have been tried—and discarded. One must bear two facts in mind. First, that it is the only type of deafness which seems to be hereditary; and second, not one case out of a hundred, diagnosed as otosclerosis, has ever been proved to be such on pathological examination. However, there are a sufficient number of cases of deafness which need a reactivation of the middle ear. Some years ago we attempted such a procedure by injecting mild antiseptics into the middle ear. There was an immediate improvement in hearing but it was not lasting. We would suggest that thyroxine be injected by inserting a uretheral catheter into the middle ear through the Eustachian tube.*

H. H.

## *Neoplasms Involving the Middle Ear*

L. A. Schall (*Archives of Otolaryngology*, 22:548-553, November, 1935) notes that there is little discussion of neoplasms of the middle ear in medical literature. At the Massachusetts Eye and Ear Infirmary (Boston) 15 cases of neoplasm of the middle ear have been seen in twelve years in a total of 90,040 cases with pathological conditions of the ear. Three of these patients are now living, 2 of them four and nine years respectively after treatment. The author has personally treated 6 cases of neoplasm of the middle ear, 2 from the Massachusetts Eye and Ear Infirmary series, 3 from the Huntington Memorial Hospital and one from private practice. In these 6 cases, 2 were basal cell carcinoma, 2 hemangio-endothelioma, and one each adenocarcinoma and epidermoid carcinoma, grade 4. The symptom most suggestive of neoplasm is bleeding from the external auditory canal; this bleeding may vary from a blood-tinged discharge to severe hemorrhage after removal of granulations or an aural polyp. Pain usually does not occur until the growth is large enough to cause pressure. Facial paralysis may occur early, as in 2 of the author's cases. In 2 of his cases, an aural polyp was found and removed; malignancy was suspected when this procedure was followed by excessive bleeding, and microscopic examination of the specimen confirmed this diagnosis. The author is of the opinion that if every aural polyp was examined microscopically, early diagnosis of malignant growth would be made more frequently. Treatment in these cases consisted of excision of the entire cutaneous canal; radical mastoidectomy; and radium treatment. Sufficient space for the proper application of radium to the site of the tumor can be obtained only by radical mastoidectomy; platinum radium needles with a wall 0.5 mm. thick protected by 0.5 to 1 cm. of gauze were used. A total dosage of 600 to 1000 milligram hours, according to the type of the tumor, was given. One of the patients, with epidermoid carcinoma grade 4, died three months after treatment. Another patient (hemangio-endothelioma) died two years after treatment from pneumonia with no signs of recurrence of the tumor. The other 4 patients are living and free from recurrence two years and nine months to four years and two months after treatment. These results show that the prognosis in neoplasms of the middle ear with radical operation combined with radium treatment "is no longer hopeless."

COMMENT

*The value of this paper is in bringing to our attention that polypi, particularly if they bleed a great deal or recur, are very possibly malignant.*

H. H.

## *Acute Infections of the Middle Ear and Mastoid Process*

J. R. Page (*Laryngoscope*, 45:839-843, November, 1935) reports that in 1934, myringotomy was done in 836 cases of acute middle ear infection at the Manhattan Eye, Ear and Throat Hospital. Cultures were made of the pus in every case and it was found that hemolytic streptococcus was the predominant organism, occurring in 252 cases, or 30.1 per cent.; next in order of frequency were *Pneumococcus* Type III and *Staphylococcus aureus*, occurring in 117 cases (13.9 per cent.) each. There were 185 cases in which no organism was found. Mastoidectomy was required in 43 cases, or 5.5 per cent. The greatest number of mastoidectomies (20) were done in the hemolytic streptococcus infections; but the largest percentage of mastoidectomies for a single type of infection was done in the *Pneumococcus* Type III cases—13 mastoidectomies in 117 cases, 13.1 per cent. Five of the *Staphylococcus aureus* infections required mastoidectomy and one of the 19 *Staphylococcus* albus infections. None of the cases in which other types of organisms were found required mastoidectomy. Of the 185 cases in which no organism was found, mastoidectomy was done in 4 cases; cultures made at the time of the mastoid operation were also sterile. The only death in this series occurred in this group, and *Pneumococcus* Type III in pure culture was isolated from a brain abscess at autopsy. The largest number of cases were seen between March 15 and June 15th; the smallest number (87 cases) in the last quarter of the year; hemolytic streptococcus was the predominating organism at all seasons of the year. As 15 different types of organisms were found throughout the year in acute middle ear infections, and mastoidectomy was required in only 4 of these types, this indicates that cultures taken at myringotomy are of some prognostic value.

COMMENT

*When an acute observer, such as the author, presents statistics, they are worthy of consideration. Two points strike us as extremely important. First, out of 836 acute infections of the middle ear, needing paracentesis, only 43 needed an operation on the mastoid bone. Second, that the* Streptococcus hemolyticus *was the offending organism in nearly 50 per cent. of the operated cases.*

H. H.

### *Deafness in Osteomyelitis*

A. Rainer (*Folia Oto-laryngologica*, 45:344-347, November, 1935) notes that deafness is a rare complication of osteomyelitis in cases in which not the petrous portion of the temporal bone, but other bones are involved. Only 9 cases of this type have been reported in literature, and the author reports a new case. In his case the patient was a man twenty-six years of age, who had had chronic osteomyelitis, involving several bones, for sixteen years. Fifteen years after the initial acute osteomyelitis, deafness was noted, accompanied by tinnitus and dizziness, and advancing rapidly to total deafness. Examination showed nerve deafness and involvement of the vestibular apparatus. In 3 of the 9 cases reported in literature, the osteomyelitis affected more than one bone. In all the other cases reported the onset of deafness followed the initial acute osteomyelitis more closely than in the author's case. The longest interval was three and a half years. The deafness in osteomyelitis, the author believes, is to be attributed to a degenerative toxic neuritis of the auditory nerve, resulting from the toxins of the chronic infection.

COMMENT

*Apparently such an association is purely accidental.*

H. H.

### *Disease of the Hip Complicating Otogenic Sepsis*

N. Leshin (*Archives of Otolaryngology*, 22:466-481, October, 1935) notes that metastases are a frequent complication of otogenic sepsis, especially in children. Metastases may occur without sinus thrombosis, and it is important that this fact be recognized. The author reports 4 cases with metastases to the hip joint following mastoidectomy. None of these cases showed evidence of lateral sinus thrombosis, but blood cultures were positive. In 2 cases, the hop metastasis was an extra-articular abscess which cleared up following incision and drainage, but in the other 2 cases the hip joint was involved with resulting ankylosis, which in one instance was bilateral. In one case a *Streptococcus hemolyticus* was isolated from the ear, the blood and the hip abscess. The author urges otologists to be "constantly on the lookout for evidences of metastatic involvement of the joints in the presence of otogenic sepsis."

COMMENT

*We believe that the author's reasoning is fallacious. If the blood culture is positive, after an ear infection or a mastoid infection, there is a definite infection of the lateral sinus, regardless of whether it is demonstrable or not. In fact, in the majority of sinus infections, no clot can be found. If a metastatic abscess develops, it is essential to use means to close off the area which causes the trouble. In most cases, this means ligation of the jugular vein, with or without opening the sinus. Where both mastoid processes have been operated upon, repeated blood transfusions may clear up the trouble.*

H. H.

## GYNECOLOGY

### *Neurohistological Studies of the Ovary*

H. Goecke and J. Beaufays (*Archiv für Gynäkologie*, 160:211-217, Nov. 29, 1935) report a histological study of the ovaries of adult female rabbits and mice with a modification of Bielschowsky's silver impregnation method. In this way they were able to demonstrate the presence of numerous fine vegetative nervous system fibers with terminal reticulum. This finding, they believe, is of importance as explaining the action of various mental, emotional and nervous influences on the oravian function in women—menstrual disturbances, etc. Such impulses evidently act through the vegetative nervous system and so directly on the ovary, which is richly supplied with vegetative nerve fibers.

COMMENT

*As an experiment this work is very interesting and confirmatory but proves nothing more than is already known. Perhaps, however, it is through such ingenious research that we may discover many unknown facts about the ovary that would be of great benefit to womankind. More power to the research worker!*

H. B. M.

### *Tubal Reimplantation*

G. de Tarnowsky (*American Journal of Obstetrics and Gynecology*, 30:696-703, November, 1935) discusses the results obtained with his method of surgical sterilization of women by "tubal reimplantation." In this operation the tubes are amputated one-fourth inch from the cornua, the cornual stumps invaginated and closed with catgut sutures. A canal is created on the posterior wall of the uterus, and the ends of the tubes drawn through the canal, one above the other; each tubal end is then united to this canal by two fine catgut sutures, which causes the mucosa to roll outward, preventing tubal closure by adhesion. This method of operation is based on the belief "that preservation of tubal excretion prevents the possible formation of an aseptic hydrosalpinx." The author has found this method "uniformly successful," safe and simple. The operation should not be done in the presence of acute abdominopelvic infection, but subacute or chronic pathological conditions can be operated at the same time. The author has employed this method, when sterilization was indicated, for twenty-two years with no mortality and very slight morbidity. In 60 cases operated one patient has omental adhesions, and 2 developed dysmenorrhea after operation. Ovarian function was not disturbed in any case and menstruation continued normally up to the average climacteric age; libido remained the same in 25 per cent., and was increased in 75 per cent., due to the removal of fear of pregnancy. In no case in the author's experience has it been desirable to permit a subsequent pregnancy. But if such an occasion should arise, restoration of the continuity of the tubes appears to be possible.

COMMENT

*There are many good and safe surgical operations for sterilization. Dr. de Tarnowsky's operation would appear to be one of these. I have never used it but the surgical principles involved are sound, save in one particular —the claim that if pregnancy were subsequently desired, restoration of the tube could be accomplished. To this statement I would take exception. It is well known that re-implantation of a resected tube into the uterine cavity in such a manner as to retain its potency is technically most difficult. Personally, I would term the author's operation a permanent sterilization procedure.*

H. M. B.

### *The Estrogenic Principle As the Common Etiological Factor of Endometrial Hyperplasia, Uterine Fibroids and Endometriomas*

J. T. Witherspoon (*Surgery, Gynecology and Obstetrics*, 61:743-750, December, 1935) presents a study of 44 cases of endometrial hyperplasia in which uterine fibroids subsequently developed. In each case the diagnosis of endometrial hyperplasia was established by curettement and microscopical study of the material obtained. In no instance was there evidence of the presence of a uterine fibroid. In 20 of these patients a laparotomy was done and no uterine fibroid found, but in every case multiple follicular cysts of the ovaries were present. All of these 44 patients returned to the hospital after varying intervals, averaging four years and nine months, because of the development of uterine fibroids. In every case the uterus was removed because of the fibroids. In 18 cases both ovaries were excised, and in 10 cases all remaining

ovarian tissue was removed. In all the 44 cases multiple follicular cysts of the ovaries were present; in 4 cases developing corpora lutea were also found. "Any explanation for the co-existence of follicular cysts of the ovaries and corpora lutea," the author notes, "must be in the nature of an hypothesis." The myometrium was hyperplastic in 24 of the 44 cases (55 per cent.) and adenomyomatous in 8 cases. Salpingitis and adhesions were noted in 38 cases, and ovarian endometrial transplants were present in 20 cases, Endometriomas were, therefore, present in 28 cases, 64 per cent., as 2 patients showed both myometrial and ovarian endometriomas. As endometrial hyperplasia is now generally considered to be due to the excess estrogenic hormone secretion associated with multiple follicular cysts of the ovaries, the findings in these cases lead the author to conclude that this hypersecretion of the ovarian follicular hormone is also "the igniting factor" of endometriomas. And also that the effect of the excess action of this hormone for a sufficient length of time results in cellular metaplasia of the uterine muscle cells, with the subsequent development of uterine fibroids. This hypothesis would explain the frequent association of the three conditions—endometrial hyperplasia, endometriosis and uterine fibroids—observed clinically, and also the clinical features common to them all—hemorrhage and sterility.

COMMENT

*Witherspoon has written about the etiology of these conditions before—and very earnestly too. However, we cannot entirely agree with his conclusions. That these three pathological lesions are frequently associated is conceded; that their etiology is similar is still questionable. Let us not blame the endocrines for every pathological lesion that cannot otherwise be accounted for.*

H. B. M.

## *Hypothyroidism As a Problem in Women*

C. H. Davis (*American Journal of Obstetrics and Gynecology*, 30:570-576, October, 1935) notes that for many years the problems associated with hypofunction of the thyroid were "overshadowed" by those of hyperfunction and thyrotoxicosis. Myxedema, when well developed, is recognized without difficulty but most patients with moderate degrees of hypothyroidism do not show the thickened skin and fluid retention characteristics of myxedema. Basal metabolism tests are necessary to establish the diagnosis of hypothyroidism in such cases. At the Columbia Hospital, Milwaukee, Wis., one or more basal metabolism determinations were made on 1,205 women and girls, and it was found that 290, or 24 per cent., showed a basal metabolism rate below minus 10. In 600 cases in which routine basal metabolism determinations were made, 306, or 51 per cent., showed a rate below minus 10. Of these 106 had a basal metabolic rate of minus 10 to minus 15; 98 of minus 15 to minus 20; 63 of minus 20 to minus 25. A series of 100 pregnant women were included in this group, and of these 33 per cent. showed a rate below minus 10. The majority of the 306 patients with basal metabolic rates below minus 10 had a constant feeling of weakness or fatigue and drowsiness; other symptoms noted "in varying degrees" in these patients were generalized pains, joint pains, constipation, nervous depression, menstrual disturbances, sterility, frequent miscarriages, overweight, dry skin, and occasionally falling hair. This study indicates that a low basal metabolic rate is a common condition in Milwaukee and vicinity. If these women become pregnant and give birth to children, a considerable group of infants may show thyroid deficiency within a few years. In most of these 600 cases desiccated thyroid given hypodermically raised the basas metabolism and relieved the symptoms. In cases with basal metabolic rates of minus 10 to minus 15 and symptoms of weakness and fatigue, but without physical findings suggestive of hypothyroidism, a few weeks' treatment with thyroid was sufficient to relieve symptoms and maintain the basal metabolic rate at a normal level for long periods. In every case the administration of thyroid is controlled by basal metabolism tests and the smallest dose "which will carry the patient" is employed.

COMMENT

*Strange as it may seem, Davis found that 51% of 600 women living in Milwaukee had a metabolic rate of below minus 10 and about 4.9% of these minus 20 to 25. This may account for a greater number of sterility cases than is generally appreciated. When pregnancy does occur the offspring may exhibit hypothyroidism after a few years.*

*Thyroid administration is indicated but should be controlled by frequent clinical observations and metabolic rate tests. Many low pressures in early pregnancy are materially improved by the administration of thyroid. Try it, but be careful of dosage!*

H. B. M.

## *Ovarian Tumors of Endocrine Significance*

J. V. Meigs (*Annals of Surgery*, 102:834-847, November, 1935) lists the known types of ovarian tumors with definite endocrine significance as follows: Ovario-testis; testicular tubular adenoma of Pick; arrhenoblastoma; hypernephroma of adrenal origin; disgerminoma or seminoma; granulosal cell tumor. Ovario-testis is a benign lesion—an embryonal abnormality, rather than a true tumor, originating in normal testicular cells, forming "a fairly normal testicle." In the testicular tubular adenoma, there is an adenomatous development in the testicular portion of the ovary. Arrhenoblastomata arise from "undifferentiated germ cells or indifferent sex cells," and are semi-malignant or very malignant semi-solid or cystic tumors. All these tumors probably secrete male sex hormone and produce hermaphroditism (in ovario-testis) or masculinization of varying degree. The testicular tubular adenoma of Pick is the least masculinizing of the group. Removal of the tumor of any of these types permits the patient to return to the normal feminine type provided that, in the case of ovario-testis, the anatomic development of a hypo- or epispadias has not progressed too far. Hypernephroma of the ovary of the adrenal type is a rare lesion; and produces masculinization similar to that of arrhenoblastoma and to that observed in true hyperplasia or adenoma of the adrenal cortex in females. The disgerminoma or seminoma originates in the indifferent sex cells of the ovary. It is a tumor of early life and prevents normal female development in some cases and causes disturbances of the menses in others. It is a round cell carcinoma, but apparently not of a very malignant type, as of 5 cases that have come under the author's observation 4 are living and well more than four years after operation. The granulosal cell tumor originates from the follicular apparatus, either primitive or adult. It may be either benign or malignant; it is the only feminizing tumor of the group and produces precocious femininity and early menstruation in young girls; in adults it produces abnormal bleeding of the estrin type with hyperplasia of the endometrium; in women past the menopause the bleeding may be continuous, irregular or periodic (menstruation of the non-ovulating type). Removal of the tumor relieves the symptoms. Seven cases of granulosal cell tumor of the ovary have been observed in women twenty-six to forty-two years of age; of these 2 have died; one cannot be traced; of the 4 patients living and well only one has lived five years since operation.

COMMENT

*Robert Meyer, perhaps, did more than any one else to stimulate the investigation of ovarian tumors of endocrine significance. The study of these tumors is most fascinating. Transformation of the personality of the host after removal of these tumors is nothing short of miraculous—to patient, family, friends and doctor.*

*They are fortunately of very rare occurrence. They occasionally exhibit characteristics similar, but not identical with, those of malignancy. At least two (2) types are, however, definitely malignant.*

*The proper treatment of these tumors requires the full coöperation of surgeon or gynecologist and pathologist, and, when malignant, the radiologist.*

H. B. M.

# OBSTETRICS

## *Bleeding in Late Pregnancy*

E. G. Waters (*American Journal of Surgery*, 30:444-449, December, 1935) reports that in 14,000 deliveries at the Margaret Hague Maternity Hospital, Jersey City, N. J., there were 191 cases of severe bleeding in late pregnancy, of which 120 were placenta previa, 61 abruptio placentae, and 10 rupture of the uterus. In placenta previa, the symptoms are due entirely to the acute blood loss; in abruptio placenta and rupture of the uterus, there is also pain and early shock. The changes of most importance in all these conditions are: Acute blood loss with resulting hematological changes; lowered blood pressure and increased pulse rate; appearance of shock; secondary blood dilution; oligemia with the establishment of "a vicious cycle," involving the cardiorespiratory system; central nervous system disturbances, cerebral anemia and lowered body temperature. Since blood loss is "the one common factor which permits or abets all the succeeding symptoms," replacement of blood volume is the factor of most consequence in treatment. The author has found that transfusion of whole blood given slowly is the best method of therapy. As there may be delay in obtaining a suitable donor for transfusion, other methods may be used as a temporary expedient. The author prefers the intravenous administration of glucose solutions, either 10 per cent glucose in saline, or a 6 per cent gum acacia in 20 per cent glucose. Such solutions temporarily increase the blood volume and glucose also "affords the liver and tissue cells a needed element," and tends to maintain renal secretion. The patient must be kept in the Trendelenburg position, heat applied to maintain body temperature, and fluids given by mouth if possible, or by retention enemas. For the necessary surgical procedures, ether should never be used as an anesthetic. In the 191 cases reported, there were 8 deaths, and in 6 of these ether had been employed.

COMMENT

*The bleedings of late pregnancy, particularly placenta previa and ablatio placentae, are real calamities. No emergency is greater or requires keener judgment. Stop the loss of blood and replace this loss with new blood by direct transfusion is a cardinal principle in the management of these cases. During the interim, while getting ready for blood transfusion, lose no time in combating the ever present shock. Concentrated glucose 25 to 50% in 200 to 300 c.c. of hot saline (plus external heat and morphine) is highly recommended. Remember! the longer you procrastinate the less likely you are to save the patient's life.*

H. B. M.

## *The Vitamin C Requirement in Pregnancy and Lactation*

W. Neuweiler of Berne (*Klinischa Wochenschrift*, 14:1793-1794, Dec. 14, 1935) has found a reserve storage of vitamin C in the adrenals of the new-born, which is evidently withdrawn from the mother during pregnancy; also that the lactating women eliminate a considerable amount of vitamin C in the milk. That the Vitamin C requirement of pregnant and lactating women is greater than normal is also shown by recent experiments to determine the amount of injected vitamin C (in the form of ascorbutic acid) excreted in the urine of normal, pregnant and lactating women. He found that normal women excreted a larger percentage of the vitamin C injected than either pregnant or lactating women. The retention of the vitamin was greatest in the lactating women, but greater in the pregnant than in the non-pregnant women, indicating an increased demand in both pregnancy and lactation. This increased demand must be supplied, if not in the diet, in the form of ascorbutic acid.

## *Etiology of the Toxemias of Pregnancy*

M. B. Strauss of the Harvard Medical School (*American Journal of Medical Sciences*, 190:811-823, December, 1935) reports a study of the osmotic pressure of the plasma proteins and of the venous pressure in normal pregnant women and in the toxemia of pregnancy. In 20 normal pregnant women on adequate diets, the average osmotic pressure of the plasma proteins was 258 mm. water; in 15 normal pregnant women on diets low in protein, it was 232 mm. water; in 20 cases of non-convulsive pregnancy toxemia, the average value was 215 mm. water, and in 10 cases of eclampsia, 175 mm. The average venous pressure in 20 normal pregnant women was 10 cm. water (ranging from 3 to 18 cm.), and in 20 patients with non-convulsive toxemia, 13.3 cm. (ranging from 8 to 20.5 cm.). The values for the toxemic patients are at least twice as high as the average for normal non-pregnant women. A study of the diet of the 20 women with non-convulsive toxemia showed that it had been definitely low in protein, probably less than 50 gm. daily, often over a period of years. Fifteen of these 20 women were treated by means of a diet containing 260 gm. protein, 150 gm. carbohydrate and 70 gm. fat; 10 of them also were given injections of a vitamin B, concentrate and a liver extract containing vitamin B. All of these women showed a loss of weight due to a decrease of occult or gross edema, and a gradual disappearance of the signs and symptoms of toxemia. Five of the women with non-convulsive toxemia were given a diet of 20 gm. protein, 400 gm. carbohydrates, and 65 gm. fat. All became definitely worse in a period of two weeks. One of the manifestations of the toxemia of pregnancy is water retention; among the factors causing this water retention is a lowered osmotic pressure of the plasma proteins, usually in the presence of an increased venous pressure. The results of the author's study indicate that restriction of the protein intake in pregnancy is definitely harmful; and also that restriction of protein is not indicated in the treatment of the toxemia of pregnancy.

COMMENT

*The toxemias of pregnancy always carry with them a certain definite morbidity and all too frequently a mortality. Any investigation, therefore, as to the cause and treatment of this problem is timely.*

*Protein starvation during pregnancy is now definitely known to be harmful and, moreover, the rigid restriction of protein is not indicated in the treatment of the toxemias of pregnancy.*

H. B. M.

## *The Newly Recognized Oxytocic Principle of Ergot*

V. L. Tuck (*American Journal of Obstetrics and Gynecology*, 30:718-723, November, 1935) notes that M. R. Thompson of the University of Maryland and Dudley and Moir in England, working independently, have isolated a pure crystalline substance of an alkoloidal nature from ergot that is definitely oxytocic. The author has used the substance isolated by Thompson (known as ergostetrine) as the only oxytocic in the second and third stage of labor in 332 deliveries. It was given by mouth in 184 cases, by hypodermic injection in 20 cases and by the rectal route in 128 cases. When given by mouth, it was usually given after the second stage of labor, by rectum after the third stage of labor, and by hypodermic injection after either the second or third stage. Whatever the route of administration, the uterine response was always of the same type. There was no tonic spasm, but a colonic contraction followed by a period of relative relaxation of short duration; this cycle of contraction and relaxation continued for several hours, showing a gradual decrease in both the degree and the frequency of the periods of relaxation, "thus leaving the uterus in a more or less contractile status." There was a noticeable decrease in the amount of blood lost, and no case of even moderately severe postpartum hemorrhage occurred in the patients who re-

ceived ergostetrine. The response of the uterine contractions was obtained more rapidly with administration by the rectal route than with oral or hypodermic administration and the author recommends this method especially. Considering any elevation of temperature above 100° F. occurring twice in twenty-four hours exclusive of the first twenty-four hours after delivery as the standard of morbidity, the morbidity in the 204 patients given the drug by the oral and hypodermic routes was 14 per cent, in the 128 patients given the drug per rectum, 9 per cent.

COMMENT

*In the reduction of maternal morbidity any oxytocic drug that is stable and potent should be more frequently employed during the postpartum period. Ergot, as we buy it in the open market, is not a thoroughly dependable oxytocic. If it were it certainly would be the preferable drug. When potent, it has all the qualifications of a good oxytocic. Because of this unreliability of ergot, there has "sprung up" the scientific pastime of discovering a new oxytocic principle of ergot about every fortnight—and where are we?—Heaven knows! However, it seems certain that out of all this research we undoubtedly will emerge with a reliable oxytocic principle of ergot for which the obstetrician will be duly grateful.*

H. B. M.

## *Determination of Rupture of the Membranes*

A. G. King (*American Journal of Obstetrics and Gynecology*, 30:860-862, December, 1935) notes that it is often of great importance to the obstetrician to know whether the fetal membranes have ruptured or not; and the patient's statements in this respect are often untrustworthy. In many cases the amount of fluid lost is so small as to escape detection "in the ordinary nursing care." When the fetal membranes rupture, the alkaline amniotic fluid reduces the normal acidity of the vaginal reactions to a neutral or faintly alkaline reaction. The use of litmus paper to determine the change of reaction is not satisfactory. Temesvary has found that the indicator dye dibromthymolsulphonphthalein, or bromthymol blue, is a more sensitive indicator of minor changes in the pH of the vaginal secretions. The author has used a modification of Temesvary's method for determining changes in the reaction of vaginal secretions as a sign of rupture of the membranes. Applicators of cotton wool are dipped in a 0.2 per cent alcohol solution of bromthymol blue, allowed to dry and sterilized by autoclaving. To make the test, an applicator is introduced well into the vagina and allowed to remain for a full minute. When withdrawn, if the original orange color persists, the reading is negative, indicating intact membranes; if there is a change to blue green, or if there are green "flecks" anywhere, the reading is positive, indicating rupture of the membranes. If there is much mucus on the applicator, it may be rinsed off in running water without affecting the result. The author has found that the accuracy of this test is high. In 141 cases in which the membranes were intact the test was negative in 140 (99.3 per cent); the one false positive occurred in a bleeding case, owing to the presence of blood, which is alkaline. In 169 cases in which the membranes had ruptured, the reaction was positive in 160 (94.7 per cent). The 9 false negatives may be explained by the presence of an insufficient amount of amniotic fluid; the percentage of false negatives increased with the length of time that elapsed after the rupture. In cases tested within four hours after rupture, there were only 2 per cent false negatives. In 2 cases in which a positive test was obtained, only one of the membranes had ruptured, but some amniotic fluid had escaped.

COMMENT

*Where definite information is desired regarding rupture of the membranes—and occasionally this is quite important—this method as described by King is very satisfactory. This work was done under our supervision at the Methodist Hospital of Brooklyn and I am for any diagnostic procedure that is correct 94.7% of the time. Try it on your next "tough" case of questionable ruptured membranes—you will find it very soothing to your doubtful state of mind.*

H. B. M.

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### Determination of the Cause of Death

(*Concluded from page 48*)

cause of death. Bacteriological search showed the presence of pneumococci in the pus. Now, surely, from what we know, the electric current did not give birth to the pneumococci, and to say how much death was hastened by the electric shock would be purely speculative.

About two years ago, a man, 50 years old, employed as a dish washer, was alleged to have gotten a splinter of steel wool in his left middle finger while washing; he reported his injury to his employer, who took him to a physician. The finger was not opened, and in fact did not appear to have been infected. About two weeks following the alleged injury, he was admitted to the hospital with a psychosis and death followed within 48 hours. Autopsy showed a markedly emaciated individual; the finger showed no infection; anatomical findings of cardiovascular-renal changes were present, sufficient to account for death. This case is now pending and, in my opinion, it would be speculative to hazard a guess both as to causal relation or aggravation.

Finally, because so much may depend on one's conclusion, permit me to quote Polonius from "Hamlet": "To thine own self be true; then it must follow as the night the day, thou cans't not then be false to any man."

515 Ocean Avenue.

### Comminuted Colles' Fractures in Elderly Patients: Methods of Treatment and End Results in Thirty Cases

G. E. Haggart, Boston (*Jour. A.M.A.*, Nov. 30, 1935), points out that comminuted Colles' fractures are of relatively frequent occurrence in elderly patients. The comminution appears to be due to the presence of brittle avascular bone. Prompt reduction of the fracture is imperative. Reduction should be carried out under general anesthesia, tribrom-ethanol preferred, and then visualized under the fluoroscope. It is most important that the dorsal tilt of the radial articular surface be corrected and that the normal relationship of the distal radial ulnar joint be re-established. There are pronounced advantages of the so-called sugar tong (Simpson) plaster splint. Because of the tendency to recurrence of the deformity of the distal end of the radius in these elderly patients, owing to delayed bone repair, it is believed that the extremity should be continuously immobilized in the "sugar tong" plaster splint for a minimum of from five to seven weeks. The splint is adjusted as indicated; unless there originally was marked swelling, this adjustment does not require removal of the splint. Flexion contracture of the hand did not occur in the patients treated by this method. Free finger joint motion is necessary, a range of motion allowed by careful application of the splint. Daily complete arm abduction is of advantage in avoiding limitation of shoulder joint motion. Nonunion of the ulnar styloid, following fracture, was not a significant cause of symptoms. With this procedure, followed by intensive massage, heat and active exercise, a good anatomic and a good functional result was obtained in twelve and in ten patients, respectively, in a group of fifteen as compared with five good anatomic and six good functional results in a similar group of fifteen patients who were splinted an average of three and a half weeks.

# Editorials

### *The Population Problem*

Whatever has to do with the safeguarding of life and the preserving of health belongs in the sphere of medicine. War and famine threaten the physical welfare of mankind; they therefore come within this sphere.

Investigation of the etiology of war and famine reveals, as a very definite cause of both of those conditions, a conflict of these two factors: the size of the earth and the amount of the substances required for the support of human life which the earth can produce, which is a limited factor; and the principle of the increase of population, which is an unlimited factor. These two factors inevitably tend to come into conflict and to produce famine and war. History abounds in striking examples of such conflicts and such consequences. At the present time such conflicts are producing war in some parts of the earth and threatening it in others. Why is Japan encroaching on China? Is it not to get material support for her teeming population? Why is Italy taking perilous chances in her African adventure? Is it not for the same reason? Why did Germany brave an armed world, if not to get by force from her neighbors material advantages needed for the support of her increasing population? Why are many nations now arming themselves to the teeth, if not in preparation for engaging in, or for defending themselves against, predatory adventures stimulated by overpopulation?

Nature says that war and famine caused by overpopulation are part of her program of evolution—they make the struggle for existence harder, with beneficial results to the human race, considered broadly.

We know that nature's ways of doing things are fundamentally right; but human intelligence has learned how to assist nature, how to facilitate her processes in many cases. For example, nature has her way of treating appendicitis; but treating a bad case of appendicitis by her method of walling off the ruptured appendix and, if she has been able to prevent a general peritonitis, letting the abscess evacuate through what opening she is able to make, can be improved on by human art—the surgeon can do a better job and show a much lower mortality rate.

Recognizing that overpopulation is a menace to the physical welfare of mankind, how should human intelligence deal with the medical problem thus presented?

Twenty-three hundred years ago Plato, whose keen intelligence glimpsed many great truths, suggested a solution of this problem which is, indeed, the obvious solution, viz, artificial restriction of the population, and with that restriction, what logically goes with it, intelligent regulation of the population along eugenic lines.

If human intelligence does not improve on nature's procedures for the restricting of population, and on her slow but effective method of eugenic regulation, then wars and famines must continue to produce their inevitable human misery.

One of the methods employed by nature for keeping the population within the limits set by mundane capacity, viz., the use of disease as a depopulating instrument, has already been greatly weakened by the activities of human intelligence. Disease as a devastator of human life is much less in evidence now than it was formerly. But medicine, by lessening disease, has favored the increment of population, and has made more acute the problem of overpopulation. A special responsibility rests on medicine to ameliorate the world pains and distresses which overpopulation produces.

Radical socialistic remedies have been suggested for these pains and distresses; but those remedies are contrary to nature's fundamental laws, and must be classed as quack remedies.

The only legitimate choice would seem to be between the restriction of population and its eugenic regulation along lines laid down by human intelligence, and nature's crueler method of doing the same thing.

E. E. C.

### *Scientific Accuracy of the Mosaic Law in the Sphere Of Natural Birth Control*

The law of separation of Moses seems to dovetail remarkably well with the calculations of Ogino, Knaus and other proponents of the modern method of natural birth control.

The Mosaic law runs as follows:

> But if she be cleansed of her issue, then she shall number to herself seven days, and after that she shall be clean.—*Leviticus,* xv. 28.

Assuming the menstrual period to be five days, the added seven days make twelve. To be sure, all this applies to a 28-day cycle, for Moses could not take account of exceptions.

This command to abstain from intercourse until the twelfth day of the menstrual cycle takes us well toward the middle of the fertile period now advertised by the new school of natural birth control; in fact, it takes us to the first day of ovulation, as Ogino and Knaus calculate it. So the law of Moses hooks up definitely with the "new teaching."

Of course, Moses sought a high birth rate. Mohammed, lacking the scientific genius and research spirit of Moses, in the biologic sphere, was obliged to rely primarily upon polygamous propagation for results. In the one case we have a high degree of technical finesse, with no disruptive social effects; in the other we have a crude system in which success was attained at great social cost, that is to say, wreckage of the institution of monogamous marriage. Thus Moses was incomparably the greater

lawgiver, while science did not come into the ken of Mohammed at all.

It is possible that Moses may have seen breeding experiments conducted by others upon Egyptian slave girls, thus arriving at his remarkable conclusions. Such human experimental material was then available in quantity.

### *The Fine Art of Eugenical Murder*

J. H. Wallis (*American Mercury*, January, 1936) makes out a good case for murder as an eugenic force in American society. It makes for racial betterment in so far as it eliminates the unfit. This, actually, it does in the case of most of the murdered dead. It is at least as effective as sterilization would be likely to prove in our social set-up, and it is cheaper. Its benefits being comprehended it is fostered, in a sense.

Mr. Wallis estimates that this American eugenic system accounts for about 13,000 *known* homicides annually and that there are about 300,000 murderers alive at any time, and at all times. Only about one in a hundred of our murderers is executed and relatively few imprisoned. The average time served in prison is about five years.

Conditions also make strongly for a constant increase in potential murderers. Mr. Wallis estimates that there may be as many as 483,600 to-be-killers at large today.

The number of persons to-be-killed now living is figured at 523,900.

Murder is much simplified by the "virtually unrestricted purchase and possession of pistols." Most homicides are due to bullets. Probably about 3,500,000 revolvers are in the hands of the people.

Life insurance companies and police departments are the principal opponents of murder. Mr. Wallis thinks that noisy minorities opposing the murder industry are actuated either by ignorance or selfish interest. Thus people who do not understand eugenics threaten the collapse of "our great racial improvement program."

### *Symbolisms and Adjustments*

Our toleration of canine filth is just as symbolic as our toleration of the criminal filth from which the Lindberghs fled. Public opinion and official authority are alike unequal to the demands in each case. Thus our sanitary adjustments match our social morals.

### *God's Fool*

In these days of hard-boiled economic calculations the physician who "devotes his time to clinics and hospitals where he is the only unpaid employee" excites more and more the interest and curiosity of observers and critics. How, they are asking more and more insistently and wonderingly, can he hope to receive anywhere compensation at any higher rate than he sets at his clinic or hospital? "He competes with himself. And for half the time he works for nothing!" We ourselves seem to be conniving at the very outcome of it all that we profess to fear and hate most. Dean Sage, president of the Presbyterian Hospital, points out that the free services of physicians to metropolitan hospitals have been estimated to represent $44,000,000 annually. What is the matter with us? Is there any remedy for such a strange disease?

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# Correspondence

### Death-Control Versus Birth Control

*To the Editor of* THE MEDICAL TIMES:

*Apropos* of your editorial in the January issue, I should like to make the following comments:

If the purpose of the proponents of these methods to lessen the population arises from a social or economic viewpoint, why not go the whole way—and advocate the passing of all those directly associated with our unbalanced state of affairs?

First, look at the subject from the economic viewpoint: It is my understanding that the average span of life has advanced to 55 or 58 years, due to our scientific medical knowledge. If this be correct, then all those over 60 years of age are living on borrowed time and should be called upon to defend their continued existence.

The Townsendites claim the last census shows twelve million 60 years and over, of which eight million would be eligible for pensions. From the economic standpoint, these eight million constitute a surplus which should be placed in some sweet-smelling, comfortable gas chamber and painlessly disposed of.

Science could then remove all the blood from the bodies of the departed, and type, citrate and seal it in air-tight containers ready for use. These containers could be sent to hospitals, railroad stations and all conceivable places where accidents are apt to happen, to be used for blood transfusions on those under 60 years, to save and prolong life.

We could thus save the cost of transfusions and do away with the need for blood donors. With a supply of blood from the millions yearly sent to their Heavenly Home we would then have an over-supply of transfusible blood, which could be sent all over the world for use in those unenlightened countries not following our disposal methods.

Finally, all bodies could be cremated, and the ashes used to fertilize our farms. Everybody seems to believe the farmers need help; these ashes of the cremated would be of great aid.

From the economic standpoint, we would be relieved of the pensioning of many millions, and the only ones needing a pension would be the physicians, and they only until the age of 60, when they would go the way of all flesh. Fantastic? Not any more so than the plea of the child destroyers.

Again, all chronically ill, the feeble-minded, the insane, all chronic criminals and alcoholics could be sent to the dust bin. Think of all the taxes saved by doing away with most of our jails and hospitals! This would, in considerable measure, solve our social and economic problems and would take away, or at least dampen, the enthusiasm of our loud preachers of birth control, especially the ones over 60 years of age.

The Romans had their Circus Maximus; why should not we have a Circus of Death? Think of the thousands put to death every week! What a thrill for the morbid! All over the country, we could have stadiums built and charge an admission fee to witness the departure to their future home of all those over 60 years—led by the captains of birth control, who, I am sure, would be glad to sacrifice their lives in such a worthy cause to help humanity.

Our slogan, then, should be, fewer and fewer burdensome pensioners over 60 years of age and more and better babies, to grow to take up the demand of abundant jobs resulting from our far-seeing salvage of the human race.

444 55th Street, Brooklyn, N. Y. P. J. YORK, M.D.

Bacteriologist: "With your mania for sticking everything in your mouth you have again swallowed my yellow fever germs."—SORO, in *Marianne*, Paris.

# News and Notes

### Care of the Chronically Ill

The importance of early construction of a hospital for chronic diseases on Welfare Island was recently stressed by Dr. Ernst P. Boas, chairman of the committee on chronic illness of the Welfare Council of New York City.

Dr. Boas reviewed the grossly inadequate facilities for the care and treatment of the chronically ill that prevail in the city institutions and predicted that existing evils will be reduced to a minimum when the chronic disease hospital is erected.

Dr. Boas lauded the recently approved projects for a research unit, nurses' home, and power plant on Welfare Island but warned against any abatement of group effort in behalf of chronic patients. He pointed out that interested organizations might be lulled into a false belief that these preliminary measures are sufficient to warrant discontinuance of their endeavors for reform.

Amendments to the local laws to permit home care of chronic patients and expanded social service activity in their behalf were also urged by Dr. Boas.

### Physicians' Equity Credit Union Declares Dividend

A 3% dividend was declared payable as of January 2, 1936, by the Directors of Physicians' Equity Credit Union, a departmental activity of the Physicians' Equity Association, at a meeting held Friday, December 20, in their Executive Headquarters, 745 Fifth Avenue.

Doctor Charles Goodman, President of the Credit Union, explained when announcing the dividend, "It must be remembered that the first loan made by our Credit Union was negotiated only six months ago. Hence, this dividend of 15c a share is for all practical purposes a full 6% dividend if the full twelve months of the year is taken into consideration."

Continuing, Doctor Goodman said, "It is the aim of most of us to be successful and it is always a pleasure to announce successful progress. The primary purpose of the Credit Union is to promote thrift among Equity members. A 3% dividend should be proof enough that we have accomplished this purpose in the short space of six months. Do not lose sight of the fact, however, of the other equally important accomplishment, i.e., enabling fellow members to meet and solve financial problems without recourse to loan sharks. Most of our loans were made for the purchase of equipment, payment of children's tuition and sudden illness. This is concrete evidence of the value of combining our interests and our problems and solving them among ourselves. It can be done. It is being done successfully by Equity and will continue to be done to greater advantage when we have greater numbers to deal with."

Only members of the Physicians' Equity Association are eligible to save money or buy shares in the Physicians' Equity Credit Union. Loans are made for half a dozen constructive purposes—education, purchase of equipment, purchase of an automobile, extraordinary family expenses, payment of children's tuition and liquidation of expenses caused by illness. 3% of the annual dividend is given to Equity's Welfare Fund each year.

The Directors attending the meeting were Doctors Charles Goodman, Herman B. Philips, Seymour Fiske, Alton A. Smahl, John E. Bruckner, William E. Butler and Cassius L. DeVictoria. Doctor Harold M. Hays, Chairman of the Supervisory Committee, and Doctor Robert Emmet Walsh, Chairman of the Credit Committee, were also present.

### Doctor Bassler Honored

Doctor Anthony Bassler has been elected President of the National Society for the Advancement of Gastroenterology, President of the American Committee and United States Delegate to the International Society of Gastroenterology and Vice-Chairman of the Gastroenterological Section of the Pan-American Congress.

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### New York's Health Department Announces the Authorization of Pasteurized Certified Milk Sale

As the result of a special meeting of the Board of Health, pasteurized certified milk is permitted to be sold in New York City. This action follows the recent approval of the sale of this product by the New York County Medical Society Milk Commission and the Milk Commission of the Medical Society of the County of Kings.

The Health Department's regulation goes into effect immediately. Producers of certified milk in this area will continue to sell unpasteurized certified milk.

This step is in accord with the action of the American Association of Medical Milk Commissions and the Certified milks. No obligation to pasteurize all certified milk joint annual conference at Atlantic City in June, 1935, in voting permissive pasteurization of certified milk into the Official Methods and Standards for the Production of Certified Milk. This action allows certified milk producers to market both pasteurized and regular certified milks. No obligation to pasteurize all certified milk is involved, as the action was merely permissive.

The appearance of certified milk pasteurized marks an important step forward in infant and general nutrition. It has long seemed advisable to provide an opportunity for those who feel that they want milk of certified character that has the added factor of pasteurization. Prior to pasteurization the milk must conform to all the standards set for raw certified milk and after pasteurization it will have to meet even higher standards, as to bacteria content, than those for raw certified milk.

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### Outbreak of Undulant Fever Due to Brucella Suis

BENJAMIN G. HORNING, Hartford, Conn. (*Journal A. M. A.*, Dec. 14, 1935), speaks of an outbreak of undulant fever with fourteen cases and three deaths that occurred in a home for elderly persons. Raw milk from the institution herd was the only source of infection found. The herd consisted of thirty-six cows and one bull. The blood from two cows was positive and from another suggestive for brucella infection. Brucella suis was isolated from the blood of two patients and from an abscess of a third patient. Blood was drawn from thirty-two swine kept by the institution. Nine were positive and seven suggestive for brucella infection. The cattle had opportunity for natural infection from the swine. Epidemiologic evidence suggests that the outbreak was due to Brucella suis received from drinking raw milk from cows infected with Brucella suis from swine.

## BOOKS RECEIVED

*Books received for review are acknowledged promptly in this column; we assume no other obligation in return for the courtesy of those sending us the same. In most cases, review notes will be promptly published shortly after acknowledgment of receipt has been made in this column.*

HIGH BLOOD PRESSURE AND ITS COMMON SEQUELAE. By Hugh O. Gunewardene, M.D. Baltimore, William Wood & Company, [c. 1935]. 172 pages, illustrated. 8vo. Cloth, $3.00.

PERSONALITY MALADJUSTMENTS AND MENTAL HYGIENE. A Textbook for Psychologists, Educators, Counselors, and Mental-Hygiene Workers. By J. E. Wallace Wallin, Ph.D. First edition. New York, McGraw-Hill Book Company, Inc., [c. 1935]. 511 pages. 8vo. Cloth, $3.00.

A DOCTOR'S ODYSSEY. A sentimental record of LeRoy Crummer, Physician, Author, Bibliophile, Artist in Living, 1872-1934. By A. Gaylord Beaman. Baltimore, Johns Hopkins Press, [c. 1935]. 340 pages, illustrated. 8vo. Cloth, $2.50.

A PRACTICAL HANDBOOK OF MIDWIFERY AND GYNAECOLOGY FOR STUDENTS AND PRACTITIONERS. By W. F. T. Haultain, F.R.C.S., and Clifford Kennedy, F.R.C.S. Second edition. Baltimore, William Wood & Company, [c. 1935]. 356 pages, illustrated. 8vo. Cloth, $5.25.

THE MODERN TREATMENT OF BURNS AND SCALDS. By Philip H. Mitchiner, M.D. Baltimore, William Wood & Company, [c. 1935]. 64 pages, illustrated. 8vo. Cloth, $2.00.

FOR AND AGAINST DOCTORS. An Anthology compiled by Robert Hutchison & G. M. Wauchope. Baltimore, William Wood & Company, [c. 1935]. 168 pages, illustrated. 12mo. Cloth, $2.00.

THE 1935 YEAR BOOK OF RADIOLOGY. Diagnosis edited by Charles A. Waters, M.D., and Therapeutics edited by Ira I. Kaplan, M.D. Chicago, The Year Book Publishers, Inc., [c. 1935]. 580 pages, illustrated. 8vo. Cloth, $4.50.

THE 1935 YEAR BOOK OF GENERAL MEDICINE. Edited by George F. Dick, M.D., and others. Chicago, The Year Book Publishers, Inc., [c. 1935]. 848 pages, illustrated. 12mo. Cloth, $3.00.

THE 1935 YEAR BOOK OF THE EYE, EAR, NOSE AND THROAT. The Eye edited by E. V. L. Brown, M.D., and Louis Bothman, M.D. The Ear, Nose and Throat edited by George E. Shambaugh, M.D., Elmer W. Hagens, M.D., and George E. Shambaugh, Jr., M.D. Chicago, The Year Book Publishers, Inc., [c. 1935]. 638 pages, illustrated. 12mo. Cloth, $2.50.

BAUERNDOKTOR. By Franzef Menhofer. Munchen, Otto Gmelin, [c. 1935]. 184 pages. 8vo. Paper, bound RM. 3.60, unbound RM. 2.81.

AUS MEINEN KRANKENBLATTERN. By Dr. August Heisler. Forms Heft 47 of the Sammlung Diagnostisch-Therapeutischer Abhandlungen für den Praktischen Arzt. Munchen, Otto Gmelin, [c. 1935]. 68 pages. 8vo. Paper, bound RM. 2.25, unbound RM. 1.58.

MOEURS ET PROSTITUTION. Les Grandes Enquêtes Sociales. By Marcel Rogeat. Paris, Nouvelles Éditions Latines, [c. 1935]. 352 pages. 8vo. Paper, 10 francs.

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### Intensive Treatment of Morphine Addiction

The intensive treatment of addiction that THEOPHIL KLINGMAN and WILLIAM H. EVERTS, Ann Arbor, Mich. (*Journal A. M. A.*, Jan. 4, 1936), describe makes use of scopolamine and pilocarpine. The use of scopolamine in treating morphine addiction is not new. The method of administration of scopolamine and pilocarpine offers distinct advantage over any previously described methods. They offer it as a rapid relief from the craving for the drug, in a simplified, painless and nonhazardous manner, without the usual discomforts of withdrawal. The patient is first given some insight into what they propose to do and is assured that permanent relief from the habit is possible. He is also informed that he will receive absolutely no more morphine when the treatment is started. Owing to the increased psychomotor activity during the intensive phase of the treatment, constant nursing service is required. Saline catharsis, 5 drachms (19 Gm.) of Carlsbad salt for one or two doses, precedes treatment. Scopolamine and pilocarpine are given hypodermically as follows: (1) one dose of 1/100 grain (0.00065 Gm.) of scopolamine hydrobromide, (2) 1/200 grain (0.00032 Gm.) of scopolamine hydrobromide given every hour for five doses. (3) 1/200 grain of scopolamine hydrobromide given every two hours for twenty-one doses, and (4) one-eighth grain (0.008 Gm.) of pilocarpine nitrate is given two hours after the last dose of scopolamine and is continued for a total of five doses, one every hour. The central effect of scopolamine is one of a brief period of cortical stimulation, followed by a prolonged mild depression of the psychic and motor centers. Its peculiar amnesic action tends to abolish completely the memory events that occur during the treatment. After the third or fourth dose of scopolamine the patient develops a mild low mumbling delirium. He is quite busy, and often amused, by figments of his imagination and the occasional visual hallucinations of a not unpleasant variety—picking at imaginary insects on the bed and the like. He cooperates very well, obeys commands promptly and partakes freely of food and drink, and the enteric and urinary elimination is good. He rests at short intervals throughout this period. The peripheral action of scopolamine is like atropine and will therefore allay pain by its effects on sensory nerve endings. The strong effect on motor nerve endings in all smooth muscle will tend to allay any abnormal cramping of visceral muscles, and the strong effect on the secretory nerve endings will check any excess mucous or salivary secretions so commonly seen in ordinary withdrawal methods. The third nerve effect, dilatation of the pupils, passes off rather early. As for the elimination of scopolamine, much of it is oxidized in the body and the remainder is removed by the kidneys. The action of pilocarpine is directly antagonistic to scopolamine in its effects on the secretory nerve ends, motor nerve ends in smooth muscle, vagus nerve ends, and the third nerve. It does not affect the sensory nerve ends. Pilocarpine is a powerful diaphoretic. It has no cortical effect. It is eliminated in the urine, sweat and saliva. After the second dose of pilocarpine the patient's delirium rapidly subsides, and by the end of the course of pilocarpine he is mentally clear in every respect. Throughout this time he has perspired profusely and is shortly very comfortable physically in every respect. In no case did collapse or any other distress develop which might necessitate cessation of treatment. At the end of the intensive treatment the patient displays a very healthy appetite, and a high caloric diet is prescribed. The level of blood calcium falls during the administration of sedatives and hypnotic drugs. The authors have devised to supplant this, during convalescence of the patient, by having capsules on hand, twenty-four of which were made from 0.008 Gm. of scopolamine hydrobromide and 7.8 Gm. of calcium phosphate compound and giving the patient one before each meal, that is, three a day. Scopolamine in small doses is added for its mild sedative effect, which is accentuated when combined with calcium. This medication is continued for from six to eight weeks. The average period of hospitalization is six weeks. After the intensive treatment (forty-eight hours) the patient's mental and environmental status is carefully investigated and all possible adjustments are made. The patient is discharged and advised to return to his former occupation if the environment is not objectionable. He is requested to return to the outpatient department at intervals of from two weeks to a month, for three months. After this, inquiries are made from time to time for three and one-half years. The daily amount of morphine taken by individual patients just before the treatment was undertaken varied from 10 to 50 grains (0.65 to 3.2 Gm.) administered hypodermically or intravenously. Fifty-seven cases were treated in this manner. Forty-eight of the patients were badly adjusted and nine were suffering from physical illness, which had led to the morphine addiction. Of the fifty-seven patients, 54.4 per cent are known to have been permanently relieved; 12.2 per cent are known to have relapsed under the same circumstance that brought about the first addiction. In 33 1/3 per cent of the cases contact could not be made to obtain information regarding the result of the treatment after three and one-half years. Cardiovascular disease and advanced age are contraindications for this method of treatment.

# MEDICAL BOOK NEWS

*Edited by* TASKER HOWARD, M.D.

*All books for review and communications concerning Book News should be addressed to the Editor of this department, 1313 Bedford Avenue, Brooklyn, New York.*

## February, 1936

### *CLASSICAL PARAGRAPH*

It has been shown by reason and experiment that blood by the beat of the ventricles flows through the lungs and heart and is pumped to the whole body. There it passes through pores in the flesh into the veins through which it returns from the periphery everywhere to the centre, from the smaller veins into the larger ones, finally coming to the vena cava and right auricle. This occurs in such an amount, with such an outflow through the arteries, and such a reflex through the veins, that it cannot be supplied by the food consumed. It is also much more than is needed for nutrition. It must therefore be concluded that the blood in the animal body moves around in a circle continuously, and that the action or function of the heart is to accomplish this by pumping. This is the only reason for the motion and beat of the heart.

**William Harvey,** Exercitatio Anatomica de Motu Cordis et Sanguinis in Animalibus. Francofurti, 1628. Translation by Chauncey D. Leake, Charles C. Thomas, Springfield, Ill., 1928.

#### *Renaissance Medicine & Witchcraft*

THE MEDICAL MAN AND THE WITCH DURING THE RENAISSANCE. By Gregory Zilboorg, M.D. Third Series Volume 2. Baltimore, The Johns Hopkins Press, [c. 1935]. 215 pages, illustrated. 12mo. Cloth, $2.50.

This delightful book from the pen of a noted psychiatrist of Russian birth, with a very wide experience in the field of psychiatry and also an ardent student of medical history draws a remarkable picture of the attitude of the Renaissance period doctor to the prevailing belief in witchcraft. In Chapter I he discusses the physiological and psychological aspects of the Malleus Maleficarum (Witch's Hammer), of the monks Kraemer & Sprenger. In Chapter II he discusses Medicine and the Witch in the Sixteenth Century. Chapter III is a most interesting biographical sketch of Johann Weyer, "The Founder of Modern Psychiatry" (1515 or 1516). The book is a masterpiece and truly fascinating. A critical analysis is only possible to one profoundly versed in Renaissance history and psychiatry, but the average reader must readily perceive that the author sheds a new and important light on the mental attitude of the people of the period toward the horrible practices of the inquisition, resultant from the fanatical, but sincere belief of the Church, and the Medical Profession.

J. M. VAN COTT.

#### *New Edition of a Standard Textbook*

DISEASES OF THE NERVOUS SYSTEM. A Textbook of Neurology and Psychiatry. By Smith Ely Jelliffe, M.D., and William A. White, M.D. Sixth edition. Philadelphia. Lea & Febiger [c. 1935]. 1175 pages, illustrated. 4to. Cloth, $9.50.

The book in its sixth edition is written by two eminent Neuropsychiatrists. It is really an encyclopedia on Neuropsychiatry.

After an introductory chapter on the methods of examination of the nervous system, the contents of the book are presented in three parts. Part one is devoted to the physico-chemical systems or the Neurology of the Metabolism, which includes Vegetative or Visceral Neurology, and the Endocrinopathies. Part two is a description of the Sensorimotor Systems, or the Neurology of Sensation and Motion. Part three is labeled Psychical or Symbolic Systems, or Neuroses, Psychoneuroses and the Psychoses.

Part three is the outstanding one. The various forms of abnormal behavior, whether in the nature of neuroses or psychoses, are lucidly described from every aspect. Freudian psychological interpretations are the ones stressed, though the other psychological schools are not ignored. The part devoted to what we generally refer to as neurology, is a rich description of the various schools of thought on the subject. In fact, the authors have been so solicitous in giving credit to the works of the pioneers in this field that the student is apt to be confused by the impact with a tremendous amount of information. There are four hundred and ninety-seven illustrations in the book. As a whole the book would appeal more to specialists in Neuropsychiatry than to students, because of its unusually rich content and summation of various thoughts and opinions regarding different aspects of Neuropsychiatric disorders.

I. J. SANDS.

#### *Studies on Heart Failure*

FAILURE OF THE CIRCULATION. By Tinsley R. Harrison, M.D. Baltimore, Williams and Wilkins Company, [c. 1935]. 396 pages, illustrated. 8vo. Cloth, $4.50.

Congestive heart failure is the subject of this book by Tinsley Harrison of Vanderbilt University. Three hundred and fifty pages are devoted to the pathogenesis and clinical features of failure, and much bedside data and laboratory experimentation are quoted in his study of the contrasting theories of "back pressure" vs. "forward failure."

James Hope (1842) is given credit for the first clear discussion of the "back pressure" theory. In summary, when there is failure of the *right ventricle*, primary or

secondary to mitral disease, there are observed engorged veins, enlarged liver, cyanosis, pulmonary edema, pleural transudate and ascites. Should there be *left ventricle* failure, dyspnea, cough, diminished vital capacity and lung rales develop. The two sets of phenomena may co-exist.

The "forward failure" theory (decreased cardiac or ventricular output) has been held responsible for the symptoms of cardiac failure by a host of writers,—Cohnheim, James Mackenzie and the majority of English and American physicians. The premier thought in this theory is that the failing power of the ventricle affected leads to diminished output and consequent stasis of blood in the different tissues and viscera.

Of the stasis there is no question, but much clinical data is adduced by the author to explain it on the "back pressure" hypothesis. The various phenomena of failure are considered in special chapters.

The principles of treatment are clearly stated, a most satisfactory feature of the volume.

The author discusses heart sounds on page 254 and urges the abandonment of the term "poor sounds." With this advice we must take issue, for clinical experience, variable though it be, hardly sanctions the disregarding of those alterations in intensity and quality of the heart sounds that are so valuable in the appraisal of the heart reserve in fevers, pneumonia, active articular rheumatism and exhausted physical states, acute and chronic.

The book includes an exposition of the very important experimental work on circulatory failure which has been conducted at Vanderbilt University during the last few years.

FRANK BETHEL CROSS.

### *New Edition of Well Known Laboratory Manual*

CLINICAL DIAGNOSIS BY LABORATORY METHODS. A Working Manual of Clinical Pathology. By James C. Todd, M.D., and Arthur H. Sanford, M.D. Eighth edition. Philadelphia, W. B. Saunders Company, [c. 1935]. 792 pages, illustrated. 8vo. Cloth, $6.00.

The present edition of this well-known book has been partly rewritten and rearranged and considerable new matter added to bring it up to date.

There is a new chapter on clinical chemistry giving methods for all of the procedures, many of them new, in blood chemistry. Under urine analysis the author presents the urea clearance test, tests for amylase and hemosiderin, Osterberg's test for beta-oxybutyric acid and Addis' method of counting casts. The chapter on the blood has been enlarged and many new tests added. To mention a few, there are Nygaard's plasma platelet count, Sabin's vital staining method, Wintrobe and Landsberg's sedimentation method and Paunz' test for amyloidosis. The anemias and leukemias are fully discussed. Under serology the author gives the Army Medical School complement fixation test, the Kolmer method and the Kahn, Kline and Hinton flocculation methods and the heterophile antibody test. The chapter on bacteriology has also been enlarged and improved.

E. B. SMITH.

### *From a Disciple of Metchnikoff*

LACTOBACILLUS ACIDOPHILUS AND ITS THERAPEUTIC APPLICATION. By Leo F. Rettger, Ph.D., and others. New Haven, Yale University Press, [c. 1935]. 203 pages. 8vo. Cloth, $2.50.

The role of bacterial flora in disorders of the small intestine and colon has long been a subject of investigation. The authors have revived interest in the therapeutic value of B. acidophilus by very comprehensive laboratory and clinical investigations. This book is the product of four years of these studies .

Various phases of successful lactobacillus implantations are discussed; such for example as the necessity of administering a highly potent culture, very concentrated, in large volume in milk, never less than a pint daily and usually a quart; the additional administration of dextrin and lactose; the necessity of giving it for at least eight weeks.

Clinical results are given in cases of simple constipation, colitis, both of the mucous and ulcerative types and finally in a group of biliary syndromes with constipation. Improvement seemed to follow the appearance of L. acidophilus in large quantity in the stool. A case is described in which diarrhea with colitis was improved following a course of lactobacillus implantations. This organism appeared in large numbers in the stool but almost entirely disappeared during an exacerbation in the winter months. Blame for the relapse is thrown upon the freezing of the culture. May this not be reasoning post hoc propter hoc? May not the relapse of the intestinal disease have caused a destruction of the lactobacillus?

Those physicians who still retain faith in the therapeutic value of lactobacillus implantations will find many practical suggestions. Those who are skeptical of the value of this form of therapy, will probably not be entirely convinced by this book.

WILLIAM S. COLLENS.

PRESCRIPTION WRITING AND FORMULARY. By Charles Solomon, M.D. Philadelphia, J. B. Lippincott Company, [c. 1935]. 351 pages, illustrated. 8vo. Cloth.

The importance of prescription writing cannot be overestimated as it reflects the clinical experience, judgment and diagnostic ability of the physician. Unfortunately, during the past decade this art has fallen by the wayside in the line of march of progressive medicine. The curricula of our modern medical schools are so engrossed with the innumerable subjects to be taught in the space of four years, and many of these superficially, the real significance of a well constructed prescription, therapeutically and otherwise, receives only a passing mention.

This excellent book is a welcomed addition to the many that have been written on this subject. It is most complete, touching upon all phases of the topic in a clear and scholarly fashion. Its distinct advantage over books of its kind lies in the deletion of pharmaceutical procedures with which the physician is not concerned. It familiarizes the doctor, however, with those pharmaceutic operations necessary in directing the pharmacist how a prescription is to be dispensed, the quantity of medicine to be used in a given time to avoid waste and expense to the patient, the comparative cost of various remedies and other essentials too numerous to mention.

The formulary in the last section of the book shows how prescriptions should be written, giving both the Latin and English forms. It also gives the therapeutic application of drugs based upon pathologic physiology. The usefulness of the book has been greatly enhanced by the addition of serums, antitoxins, allergens, etc., which play an important part in modern therapeutics.

FREDERICK SCHROEDER.

### *Material for Debate*

FREE MEDICAL CARE. Socialized Medicine. Edited by E. C. Buehler. Volume 2. New York, Noble and Noble, [c. 1935]. 360 pages. 8vo. Cloth, $2.00.

The subject of socialized medicine is here presented in convenient form for debate. The principles and arguments for and against are clearly set forth and defined. An extensive bibliography is included. In addition the opinions of several authorities are given.

The book may well be recommended for the student who wishes to acquaint himself with the subject as a whole.

L. A. KOCH.

### *Beck's New Obstetrics*

OBSTETRICAL PRACTICE. By Alfred C. Beck, M.D. Baltimore, Williams & Wilkins Company, [c. 1935]. 702 pages, illustrated. 4to. Cloth, $7.00.

This book is different. Not a complete text book in the sense that everything of academic interest to the obstetrician is included, Beck has done exactly what he set out to do,—cover the essentials of obstetrical practice. Teachers of obstetrics will find this book ideal for their purpose, and the serious general practitioner will find the answers to his questions without the necessity of reading

through voluminous detail. Mechanisms are beautifully and clearly illustrated with original line drawings and pictorial summaries which add immensely to the interest and value of the book as a text. Only one with great experience in teaching could write such a book. The Long Island College of Medicine through Skene, Jewett, Polak and Beck has always taught obstetrics thoroughly and well. The reviewer confidently expects medical schools elsewhere to adopt this text book.

CHARLES A. GORDON.

### *The Army Laboratory Manual*

LABORATORY METHODS OF THE UNITED STATES ARMY. Edited by James S. Simmons, M.D. Fourth edition. Philadelphia, Lea & Febiger, [c. 1935]. 1091 pages, illustrated. 8vo. Cloth, $6.50.

This work has grown from a pocket manual to a volume of over 1,000 pages. The present edition is a storehouse of information for the laboratory worker. It is divided into parts, each written by a specialist. These parts deal with clinical pathology, chemistry, mycology, bacteriology, protozoology, helminthology and entomology. There are also chapters on pathological technique, veterinary laboratory methods and statistical methods which are not found in many of the standard works on laboratory methods.

E. B. SMITH.

### *On Personal Hygiene*

IDEAL HEALTH OR THE LAWS OF LIFE AND HEALTH. By Alexander Bryce, M.D. Third edition. Baltimore, William Wood & Company, [c. 1935]. 340 pages, illustrated. 12mo. Cloth, $2.00.

In this handy and readable volume of 330 pages and an excellent index, Dr. Alexander Bryce (D.P.H., Camb.) has furnished to the student and the hygienist a text of authoritative information expressed in the classic style, characteristic of the English writers. Twelve chapters divide the discussions of Food, General and Special; Drink, Work, Rest, Air, Exercise, Cleanliness, Clothing, Regularity and Moderation, The Influence of the Mind on the Body: The Cultivation of Cheerfulness—his Chapter XI alone is a treasure of sane, thorough and philosophic truth and Eugenics: The Science of Race Culture.

It is a book for the reading table which the doctor and his family may frequently turn to and enjoy either casually or studiously, and we feel sure will be sought and bought both in England and in this country and the provinces.

WILLIAM S. HUBBARD.

### *A Standard Textbook Revised*

THE ANATOMY OF THE NERVOUS SYSTEM. From the standpoint of development and function. By Stephen Walter Ranson, M.D. Fifth edition. Philadelphia, W. B. Saunders Company, [c. 1935]. 501 pages, illustrated. 4vo. Cloth, $6.50.

There is little doubt that this book has become the standard text-book and reference in its field in this country. The author has admirably managed to keep the detailed material within the range of students, and at the same time to supply the book with sufficient technical information and references to assist specialists in this branch of medicine. The book is an excellent example of the tendency of modern science to follow dynamic principles and thus more closely approach the needs of clinical medicine. The real value of the book lies in the fact that it is a combined physiology, anatomy, atlas and laboratory guide.

SAM PARKER.

### *Crossen's Gynecology Brought Up To Date*

DISEASES OF WOMEN. By Harry S. Crossen, M.D., and Robert J. Crossen, M.D. Eighth edition. St. Louis, C. V. Mosby Company, [c. 1935]. 999 pages, illustrated. 4to. Cloth, $10.00.

The eighth edition of a text book on gynecology which has been well received for almost thirty years, needs no commendation for it has stood the test of time. This edition then is all that one would expect it to be. The immense amount of our new knowledge in the endocrine field is admirably presented, and as usual the chapters on gynecological examination methods and diagnosis make the book worth while. The pathology is extremely well done. The illustrations are numerous and excellent, and those showing the technique of introducing the Gehrung pessary might well be studied by the younger gynecologists, who have never heard of this excellent support for the difficult inoperable cystocele or prolapse. This text book is sound and conservative, and can be highly recommended by the reviewer who is familiar with all the previous editions as well.

CHARLES A. GORDON.

### *Gastroenterology in Rochester*

THE STOMACH AND DUODENUM. By George B. Eusterman, M.D., and Donald C. Balfour. Philadelphia, W. B. Saunders Company, [c. 1935]. 958 pages, illustrated. 8vo. Cloth, $10.00.

This beautiful work of nearly a thousand pages is probably the most complete treatise on the medical and surgical aspects of the stomach and duodenum published thus far. Both authors, chiefs of divisions in medicine and surgery at the Mayo Clinic, are practical clinicians, and the text is replete with practical advice regarding diagnosis and treatment. The illustrations are marvelous, clear and are well described. The Roentgenlogic section, contributed by Kirklin gives a wonderful clear description, with well-chosen reproductions of X-ray films, of the essential points in making a diagnosis. Surgical technique is made clear by drawings showing the various steps of operations. Statistics of results of treatment are a valuable feature. The book is one from which the general practitioner as well as the internist and surgeon can get daily information of practical value.

A. F. R. ANDRESEN.

### *A Distinguished German Dermatology*

DIE HAUT UND GESCHLECHTSKRANKHEITEN. By Prof. Dr. Leopold Arzt und Prof. Dr. Karl Zieler. Lfg. 18 to 27. Berlin & Wien, Urban & Schwarzenberg, [c. 1934-35]. Cost of these parts in paper, RM. 105.80.

This issue contains excellent articles as follows;—Skin and Internal Secretions by Prof. Dr. Julius K. Mayr. The association of disturbances of the skin with endocrine abnormalities are thoroughly discussed. Special diseases of the skin such a Psoriasis Acanthosis Nigricans, Scleroderma, Ichthyosis, Impetigo Herpetiformis and Dermatitis Dysmenorrhoica are well described.

These and the other articles in this number contain all the information on their respective subjects. A review of each individual one would be too long for this purpose but each deserves the highest commendation.

LIEFERUNG 20. 234 pages with 98 illustrations and one colored plate.

Circulatory Disturbances and Hemorrhages into the skin are thoroughly discussed by Prof. Heinrich Gottron.

Mechanical, chemical, thermic and actinic injuries are described fully. Their treatment is given in detail by Prof. Dr. Leo Kumer.

This number is of exceptional interest and contains a large amount of useful information.

LIEFERUNG 21/22. 205 pages with 170 illustrations and 3 colored plates.

In this part the inflammatory diseases of the Skin are described in detail. Their treatment is fully given as is their etiology and pathology. This section is written by Prof. Dr. Gabor Nobl.

Skin Diseases of inflammatory nature, 2nd part, is written by Prof. Dr. Oskar Naegeli. This section is devoted to Psoriasis, Lichen Planus, Lichen ruber acuminatus and Pityriasis rubra pilaris. These diseases are covered fully in the manner which would be expected from such distinguished authorities as Prof. Nobl and Prof. Naegeli.

LIEFERUNG 23/24. 277 pages with 87 illustrations and 8 colored plates.

This volume contains articles on the hypertrophies of the Epidermis, the hypertrophies of pigment by Prof. Dr. Openheim.

Connective tissue hypertrophies and Pachyderma by Prof. Dr. Edw. Neuber. Atrophies by Priv.-Doz. Dr. Stefan Brummauer.

Neuroses of the Skin by Priv.-Doz. Dr. Alfred Perutz.

Of especial interest to the reviewer were the articles on pigment anomalies, which contain all that is known on his subject.

LIEFERUNG 25. 8vo. 165 pages with 32 illustrations and 3 colored plates.

This part is devoted to first, the prevention and fight against venereal diseases by Prof. Dr. Julius K. Mayr of Munich.

The second portion of the issue deals with the non-venereal diseases of the genitals. It contains articles on Balanitis, Phimosis and Paraphimosis by Prof. Dr. W. Frei of Berlin. The non-gonorrhoeic inflammations of the urinary tract by Prof. Dr. Gustav Scherber of Vienna; Induratio Penis Plastica and Ulcus vulvae Acutum by the same author. This chapter is of great interest to dermatologists and it is exceptionally well written. Acute Gangrene of the Genitals by the same writer is of more interest to genito-urinary surgeons. It seems to be complete and thoroughly done.

LIEFERUNG 26/27. 8vo. 363 pages with 238 illustrations and 14 colored plates.

The first article in this volume is on malignant growths of the skin and is by Prof. Dr. Franz Joseph Lang of Innsbruck. Prof. Lang has given a most complete report on this important subject. These conditions are clearly and thoroughly described clinically and histologically. The differential diagnosis is excellent. The different methods of treatment are fully given.

The second part is by Prof. Dr. Leopold Arzt and Prof. Dr. Herbert Fuhs of Vienna. As the title implies it is devoted to descriptions of the benign growths of the skin. It is complete and thorough.

The third and last part by Prof. Dr. Alfred Stuhmer of Freiburg is on the questionable new growths and related diseases and contains thorough descriptions of Mycosis Fungoides, Lymphogranulomatosis and the skin changes in leucaemia. These conditions while rare are of great interest to dermatologists and complete descriptions such as Prof. Stuhmer has given are very welcome.

These numbers complete the work. It is entirely too great to review in detail but it deserves the greatest praise. The different articles have been carefully done and they are complete, containing all that is known without being controversial. The German is not involved as is found in larger works. It is, in other words easy to read and easy for an American whose knowledge of the language has been obtained in college. This is very fortunate.

The mechanical get-up of the work is excellent. The illustrations have been well chosen and really represent what is meant. The whole work deserves the greatest praise and the reviewer is sure that the work will be a standard text-book for many years.

BINFORD THRONE.

### *With Kindest Regards*

THE MEDICAL VOODOO. By Annie Riley Hale. New York, Gotham House, [c. 1935]. 338 pages. 8vo. Cloth, $2.50.

There is little to be gained by reviewing such a book in a Medical Journal. However, the reviewer might give a few examples of the author's style; "Pasteur's 'anti-rabic' fluid—an emulsion from the decayed spinal cords of rabbits," "fake epidemics," "filthy vaccines and serums and unnecessary operations."

Of her judgment, that George Bernard Shaw is an authority on medicine, that the names of Dr. Richard C. Cabot and Dr. Hay belong in the same list of distinguished Americans.

Of her credulity, that there was an "amazing death toll" from tuberculosis in the American Army during the World War, and that this was obviously due to typhoid immunization, and that the influenza epidemic was due to the same cause, that there is a "secret compact between the insurance companies and the medical profession" to encourage the sale of biological products for the benefit of the manufacturers and the doctors, that an American soldier was sentenced to twenty-five years imprisonment at hard labor for refusing vaccination.

Of her knowledge, in confusing Calmette's ophthalmic reaction with the B. C. G. vaccine, in her belief that encephalitis could be traced to typhoid immunization by the finding of indications of vaccinia in the brains of patients dead of encephalitis, in her repeated implication that there is no virtue in such well tested biological preparations as diphtheria anti-toxin and insulin.

Of her candor, her quoting Koch as believing that bovine tuberculosis was non-transmissable to man (that he changed his opinion is well known), her statement that Typhoid Mary was incarcerated "in solitary confinement" for life because several cases of typhoid fever developed in one family where she was working, and Mary did not fall ill with the disease.

Of her charity, in her statement that vivisection is practiced for the pleasure of seeing pain, that doctors give inoculations in order to cause more illness for them to treat, that Dr. Ewing does not uphold the humoral theory of cancer solely because of his desire to benefit the surgeons and roentgenologists who "batten" on the victims of this disease and for the good of his own pocketbook; etc., etc.

O well, what's the use?

TASKER HOWARD.

### *A New Volume of International Clinics*

INTERNATIONAL CLINICS. A quarterly of illustrated clinical lectures and especially prepared original articles on Treatment, Medicine, Surgery, Neurology, etc. Volume 3, 45th Series, 1935. Edited by Louis Hamman, M.D. Philadelphia, J. B. Lippincott Company, [c. 1935]. 337 pages, illustrated. 8vo. Cloth, $3.00.

From the standpoint of the general practitioner who thinks in terms of common maladies, there is some profitable advice to be gained from this issue of International Clinics, not only as regards novel facts, but especially because of a critical appraisal of current practice. The backwoods doctor may thus be further reassured that his colleague from the medical center is still quite helpless in dealing with rheumatoid arthritis; or that the allergist cannot prove that migraine is allergic in the same sense as asthma; or that chlorosis, more recently known as idiopathic hypochromic anemia, still demands iron without the recent intrusion of copper; or that renal function may be fairly satisfactorily ascertained without blood chemistry through such means as the Van Slyke urea clearance test of the urine, and the specific gravity and P.S.P. dye tests of the urine; or that brain injuries have often proved as confusing to the brain surgeon as to the brain patient.

These and many other confessions of medical limitations should serve to inspire confidence in the cautious practitioner that his opinions are still valuable, even though he may be out of reach of big hospitals.

EMANUEL KRIMSKY.

### *Spanish Medicine*

SPANISH INFLUENCE ON THE PROGRESS OF MEDICAL SCIENCE. London, The Wellcome Foundation, Ltd., [c. 1935]. 121 pages, illustrated. 8vo. Cloth.

A brief anonymous sketch of Spanish medicine beginning with prehistoric times and carried down through the Roman, Arabic, and later periods. The most important phase of the story in its relation to European culture is found in the introduction of Arabian medicine into Europe, bringing as it did a strong Grecian influence. The ball of scientific thought was passed along in a brilliant triple play, Hellas to Islam to Spain. There are interesting illustrations. The last half of the book consists in a description of the well known research institutions and museums founded by Sir Henry Wellcome.

TASKER HOWARD.